

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 669.—VOL. XVIII.

LONDON, SATURDAY, JUNE 17, 1848.

[PRICE 6D.]

Stannaries of Cornwall.—In the Vice-Warden's Court.

PURSUANT to a DECREE of the VICE-WARDEN'S COURT, made in the consolidated causes of **COUMBE v. BICE, BURGESS v. ALDERSON**, the CREDITORS in respect of **ROCKS CONSOLIDATED TIN MINES**, in the parishes of **ROCHE and SAINT AUSTELL**, within the said Stannaries, are, on or before the 20th day of June inst., to come in and **PROVE their DEBTS** before the Registrar of the said Court, at his office, in Truro, or, in default thereof, they will be excluded the benefit of the said Decree.

J. G. CHILCOTT, Plaintiff's Solicitor, Truro.

H. S. STOKES, Plaintiff's Solicitor, Truro.

Dated Registrar's Office, Truro, June 6, 1848.

TO MINERS, COLLIERY PROPRIETORS, AND OTHERS.
—**IMPORTANT AND UNRESERVED SALE OF VALUABLE MACHINERY**, at **STOCKINGFORD**, near **NUNATON**, in the county of **Warwick**.—**TO BE SOLD, BY AUCTION**, by **WILLIAM EAVES**, on Tuesday, June 20, 1848, at Twelve o'clock precisely, upon premises adjoining **Nunaton New Colliery**, in the occupation of Messrs. Walker and Co., situate at **Stockingford** aforesaid, a superior 300-horse power

STEAM-ENGINE, WITH TWO BOILERS AND BOILER TUBE, Manufactured by the **Colebrook Dale Company**; also, a large **CAST-IRON WATER CISTERNS**, **CAST-IRON ROPE**, large dimensions; **air-pump**, **pit-rod**, **43 feet long**, clamped and plated; a quantity of **chains**, **clamps**, **plates**, and **braces**; also, part of the materials required for the erection of an engine-house for the above engine, comprising eight large beams, flight of stairs, sash frames, and rafters.

Also, a QUANTITY of **HARTSHILL STONE**, and other materials, which will be sold in one or more lots, as shall be agreed upon at the time of sale.

The **Nunaton New Colliery** is within one mile of the **Nunaton Station**, on the **Trent Valley Railway**.

EXTENSIVE IRON-WORKS FOR SALE.
(UPSET PRICE REDUCED).

TO BE SOLD, BY PUBLIC ROUP, within the Royal Exchange Sale Rooms, Glasgow, upon Wednesday, the 12th day of July next, at Two o'clock in the afternoon (if not previously disposed of by private bargain).

THE BLAIR IRON-WORKS.

Belonging to the **Ayrshire Iron Co.**, situated in the parish of **DALRY** and county of **AYR**. These works, which were recently erected at an immense cost, consist of two blowing engines, steam engines, steam-hammers, and steam-rollers for working the minerals, together with a large quantity of iron-works, and are in working order, and capable of producing upwards of 100 tons of pig-iron per annum.

One of the blowing-engines, of 90-horse power, estimated at 90-horse power, was erected in 1841; the other, a condensing-engine, was erected in 1847, and is estimated at 200-horse power; the latter being capable of blowing five furnaces, and both fitted up in the most substantial manner, and at present in the best working condition.

The furnaces have been erected with the greatest care, and are fitted with air-heating apparatus of the most approved construction. The make of each furnace has generally averaged upwards of 150 tons of iron per week, and some of them have produced 180.

There are, besides the manager's house and store buildings, 187 workmen's houses, in a habitable state, attached to the furnaces and pits, and there are 20 partly built, which could be finished at a small additional outlay. There are also a new foundry, wrightshop, fire-brick work, smithy, &c.

The **MINERAL FIELDS** consist of **COAL**, **IRONSTONE**, **LIMESTONE**, and **FIRE-CLAY**, held in lease by the company at moderate fixed rents and royalties, all situated within easy distances of the furnaces, and for the most part have the advantage of railway communication.

The **COAL FIELDS** consist of several hundred acres, of which only a small portion has been wrought. Several pits, fitted with good engines and machinery, are sunk to the coal, and partly in operation.

The **IRONSTONE** consists of the well-known black-band, yielding about 8000 tons of calcined stone per acre; and it has been estimated that there are 300 acres, or thereby, still to work; besides which, there is a large extent of clay-band ironstone, hitherto little wrought, but capable of yielding a large out-put. There are 15 pits, with excellent steam-engines, some of them in present operation; and others ready to resume working.

The **LIMESTONE QUARRY** is worked by open cast, and is connected with the works, by railway.

The **FIRE-CLAY** is abundant, of excellent quality, and cheaply produced.

The **Glasgow, Paisley, Kilmarnock, and Ayr Railway** (extending to **Carlisle**), passes close to, and has by means of it, a means of conveyance, which, and others in connection with it, the produce can be conveyed to the city and port of **Glasgow** (22 miles off), and to the sea-ports on the **Ayrshire coast**, each within a few miles of the works.

There is a large stock of calcined ironstone, coal, and limestone, on the ground, so that the works may be put into immediate operation; and, under judicious management, the manufacture of pig-iron may be carried on to the greatest advantage. The concern will be found to be well worth the attention of persons having the requisite capital, and affords an opportunity of entering into the business seldom to be met with.

MALLEABLE IRON-WORKS.—Considerable progress has been made in the erection of extensive malleable works, which, when completed, will be capable of turning out 300 tons of bar-iron weekly. The most of the necessary machinery has been prepared by the contractors, and a portion of the work could be brought into operation in a few months to produce the half of the above estimate. This work is nearly adjoining the **Pig-Iron-Works**, and connected by Railway, and will be sold, either together therewith or separately.

Plans of the property and mineral workings lie on inspection at the **Ayrshire Iron Co.'s** office, 113, St. Vincent-street, Glasgow, where, on application to Mr. Brown, every necessary information will be afforded, and orders given for inspection of the works.

The title-deeds are in the hands of Messrs. **Montgomerie and Fleming**, writers, Glasgow, to whom, and to Messrs. **McClintock and McKinnell**, accountants, there, and Messrs. **Gibson-Craig, Dalziel and Brodie, W.S.**, Edinburgh, application may also be made.

N.B.—The purchase of these works has an opportunity of, at the same time, acquiring the **Mansion-house, Laidis, and Minerals of Pitcon**, immediately adjoining (the latter being part of those above referred to, as held in lease by the company), which are advertised to be sold at the same time and place.—Glasgow, June 12, 1848.

VALUABLE ESTATE AND MINERAL FIELD IN AYRSHIRE, FOR SALE.

TO BE SOLD, BY PUBLIC ROUP, within the Royal Exchange Sale Rooms, Queen-street, Glasgow, upon Wednesday, the 12th day of July next, at Two o'clock in the afternoon, unless previously disposed of by private bargain.

ALL and WHOLE the LANDS and ESTATE of PITCON, extending to about 216 acres imperial measure, and comprehending the following lands:—viz.: The Three Merk Land of old extent of **NETHERMANS of PITCON**; the Two Merk Land of old extent of **OVERMANS of PITCON**; the Two and One-half Merk Land of old extent of **LINTSEEDBRIDGE**; from 19 fells, or thereby, of the farm and lands of **MIDDLETON**, situated on the east side of the high road from **Dalry** to **KILBURNIE**, and 1 road — falls, or thereby, of the lands of **KESSELAND**, situated on the north, or north-west side of the water of **Garnock**, with the tithes, parsonage, and vicarage of said lands; together with the **MANSION HOUSE of PITCON**, and **OFFICES and GARDEN** thereto belonging; and the whole **MINERALS and METALS** in the several lands above mentioned, and whole privileges and pertinents belonging to the same; but, excepting these eight acres, or thereby, Scotch measure, now belonging to the **Glenarnock Iron Company**, of their present working seam of **Ironstone** in the said lands; and, also, excepting the **Pitcon Railway** and branches, in so far as the same are within, and pass through, the said lands.

The **MANSION HOUSE**, which is pleasantly situated, and commands a most extensive view, is in good order and repair, and has attached to it a set of suitable and commodious offices, with walled garden, shrubbery, and pleasure ground, and the whole are inclosed from the other portion of the estate, by a high and substantially-built wall.

The **LANDS**, consisting of those attached to the mansion house, let under lease, extend to about 140 acres Scotch, or thereby, and are at present held by a respectable tenant, at a surface rent of £490 sterling per annum. The farm standing upon the lands is most substantially built, and in good order and repair.

The **MINERALS**, which have been ascertained to comprise the most valuable description of **Ironstone**, extend to about 140 acres, still unwrought, and are held by the **Ayrshire Iron Company** upon a lease, at a present fixed rent of £1000 sterling per annum, or, in the option of the landlord, at a certain lordship, which has hitherto greatly exceeded the fixed rent, and yielded a very large return. Upon a moderate calculation, the black-band yields about 3000 tons calcined ironstone to the imperial acre. There are, besides, in the course of being wrought on the lands, several seams of coal and other minerals.

The **Estate of Pitcon** is situated near to the village of **Dalry**, at which there is a station upon the line of the **Glasgow, Paisley, and Ayr Railway**, and in the immediate neighbourhood of the **Ayrshire Iron Company's Works**, with which it is connected by railway communication. This property will, in consequence, form a most desirable and profitable investment to the purchaser of the **Ayrshire Iron Company's Works** (the **Blair Iron-Works**), which, along with the benefit of the mineral lease of **Pitcon**, are advertised to be sold by public roup, at the same time and place with this estate.

The public and parish burdens payable from the estate are small; and whether regarded as in connection with the **Ayrshire Iron Company's Works**, or separately, there is seldom so desirable and eligible an investment as the present offered to competition.

For further particulars, application may be made to **McClintock and McKinnell**, accountants, 17, Gordon-street, there; **Knox and Findlay**, writers, 29, St. Vincent-place, there; **James McCosh**, writer, in **Dalry**; or to **Douglas and Ranken**, writers, 81, St. George's-place, Glasgow, in whose hands the articles of roup and title-deeds, and a plan of the estate, and mineral workings, may be seen.

Mr. McCosh will give directions for the lands being pointed out, and the mansion house, offices, and garden being shown to inquirers.

BOGLE and Co., Auctioneers.
Glasgow, June 16, 1848.

STEAM-ENGINE FOR SALE.—A highly-finished NEW 6-horse HIGH-PRESSURE STEAM-ENGINE, with or without boiler. The engine is made of the very best description of materials and workmanship. Also, a NEW HYDRAULIC PRESS, of 200 tons; diameter of ram, 7 inches; breadth of all, 3 ft. 3 in.; length of all, 5 ft. 4 in.; height in the clear, 5 ft. 10 in.; lift, 2 ft. 3 in.;—by a first-rate maker.—Apply to **Cotton, Fry, and Trueman**, 1, Royal Exchange-buildings.

COMBARTON MINES, NEAR ILFRACOMBE, NORTH DEVON.—TO BE SOLD, BY AUCTION, by Mr. GHEARSON, on Wednesday, the 28th day of June inst., all the STEAM-ENGINES, and remaining UNSOLD LOTS of MINING MATERIALS, consisting of—

1. Excellent 60-inch cylinder PUMPING-ENGINE, 9-feet stroke in cylinder, and 8-ft. stroke in shaft, with two boilers—altogether about 24 tons.
1. Excellent 26 and 50-inch Sims's combined cylinder PUMPING-ENGINE, 9-feet stroke in cylinder, and 8-feet stroke in shaft, with one boiler, about 10 tons.
1. Excellent double-acting STEAM-WHIM, 14-inch cylinder and boiler, about 5 tons, with crushing apparatus, stamps, and lifters, complete.
1. 7-inch HYDRAULIC PRESSURE-ENGINE, complete.
- A great quantity of 7, 8, 9, 10, 11, 12, and 14-inch PUMPS, with working barrels, H-pieces, dooppieces, and windrods to match; 1 1/4-inch and 1 1/2-inch plunger-pole.
1. STAMPS WATER-WHEEL, 24-ft. diameter, 20-inch breast, with lifters and stamp-heads; 2 horse-whims, capstans, shears, and sheaves.
- A great quantity of TIMBER, of various scantlings; and IRON-WORK of different descriptions.—The Sale to begin precisely at Ten o'clock in the forenoon.

For viewing the above and for particulars, apply to the agents on the mines, or to the auctioneer, Barnstaple.

N.B.—Should the engines and pumps be previously disposed of by private contract, due notice will be given thereof.

HERODSCOOMB MINE.—FOR SALE, BY PRIVATE CONTRACT, HERODSCOOMB MINE MATERIALS, either together or in separate lots, consisting of—

1. Balance-bob
 1. Shaft-bob
 1. Traveller-bobs
 1. Horizontal wood sweep-rod
 - 30 Fathoms 2-inch square iron-rods
 2. Winze kibbles
 1. Large stool—and
 1. 16-inch cylinder DIRECT DOUBLE-ACTING ROTARY STEAM-ENGINE and BOILER, complete, with pumping and drawing apparatus attached.
- This engine is in excellent condition—was erected new, about 18 months since, and the rotary and pumping apparatus about nine months, from the drawings, and under the superintendence of Messrs. Hocking and Loam, engineers; and, for cheapness of construction, efficiency, and economy, has given the most entire satisfaction.
- Parties in want of an engine to sink 40 or 50 fathoms for trial, will find this one well adapted for that purpose; and should the trial prove satisfactory, and a larger pumping-engine be required, this can be applied wholly to drawing and crushing, with no expense, as her construction will admit of her being first placed in a proper position, at a distance from the shaft.

All particulars may be had of Mr. Matthew Loam, engineer, Liskeard, to whom all tenders, stating the highest prices, must be addressed.

TO ENGINEERS, MACHINE-MAKERS, IRON AND BRASS FOUNDERS, AND OTHERS.—TO BE DISPOSED OF, BY PRIVATE CONTRACT, an excellent BUSINESS in the GENERAL IRON and BRASS FOUNDRY, STEAM-ENGINE, MACHINE-MAKING, and JOBBING TRADE, situate in the centre of a large town in the Midland Counties.

The FOUNDRY is fitted up with powerful cranes, drying stores, cupolas, and excellent blowing apparatus, capable of melting 30 tons of iron per day, and of making castings of 10 tons weight.

In the FITTING SHOP there is an excellent planing machine, by Whitworth; small ditto, large and small lathes, and boring apparatus, drilling, and screw-cutting machines, large and small grinders, glaziers, buffers, and tackle of every description, for carrying on a large trade—all driven by an excellent steam-engine, of 20-horse power.

The above is to be disposed of in consequence of the senior partner retiring from business, and offering to a young man of active habits, possessed of a capital of £4000 to £5000, an opportunity rarely to be met with.

Immediate possession will be given, and any further information may be obtained by application to Mr. Thomas Horton, 36, Great Charles-street, Birmingham.

GLAMORGANSHIRE.—A VALUABLE COLLIERY FOR SALE.—THE COLLIERY is situate within 6 miles of the sea-port town of SWANSEA, with which it communicates by canal. It is worked by level, and the coal can be delivered on board ship at Swansea, at a very small cost—expensive machinery being quite unnecessary for the proper working of the colliery. It is now in good working order, and in a fit state to supply 100 tons of coal per diem; and, with a trifling outlay, could supply a very much larger quantity.

The large coal is used for steam purposes, and the small coal can readily be disposed of to a Patent Fuel Company, lately established at Swansea; it is also suited for burning lime and other purposes.

For further particulars, apply to Richard Jenkins, solicitor, Swansea.

HEALY FIELD LEAD AND SILVER MINES, in the parish of LANCHESTER, in the county of DURHAM.—FOR SALE, BY PRIVATE CONTRACT, the above-mentioned MINES, together with all the MACHINERY and MATERIALS thereon.—These mines, which are held by lease from the Dean and Chapter of Durham, are now, and have been for many years past, in full course of working, and the produce has been considerable. The ore yielding a high per centage of lead, and the coal is well stocked with water-wheels, and all machinery necessary for extensive operations, and the prospects for deeper and more extended trials are most encouraging.

The agent on the mines, Mr. Wm. Forster, is instructed to render every facility and information to parties visiting the mines; and for further information apply to Mr. Eddy, of Grassington, near Skipton, in the West Riding of Yorkshire, who is authorised to treat for the same, and by whom satisfactory reasons will be given for the retirement of the present proprietors.—Dated May 18, 1848.

VALUABLE SEA-SALE COLLIERIES TO BE LET.—TO BE LET, and entered upon on the 1st of July next, the valuable current-working COLLIERIES of **EVENWOOD** and **NORWOOD**, in the county of Durham.

These collieries are situated upon the line of the **Stockton and Darlington Railway**, by which the coals are conveyed to the shipping ports of **Stockton** and **Middlesbrough**; and also, by means of this, and the **York and Newcastle**, and **Leeds and Thirsk** Railways, the coals have access to the important land-sale trade of **Northallerton**, **Thirsk**, **Ripon**, **York**, the lead-mining districts, and other towns in **Yorkshire**, and for shipment on the **One**; and, by means of the proposed **Northern Counties Union Railway**, with the important land-sale trade of the western parts of **Yorkshire** and **Westmoreland**.

The royalties are very extensive. Two seams of coal are in working—one upwards of 6 feet, and the other of 3 feet. The pits are at a moderate depth from the surface, and the coal is worked in an exceedingly cheap rate, and is much prized as a household coal, both for export and land-sale.

The entering tenant has the option of taking what stock he may require, at a valuation; and the amount of capital required to enter upon the collieries will be of very small amount.

For particulars apply to **Thomas Wheldon, Esq.**, **Barnard Castle**; or to **Nicholas Wood, Esq.**, **Newcastle-upon-Tyne**.—Newcastle, March 3, 1848.

TO BE SOLD, OR LET, a valuable COAL MINE, in the township of GREAT HAIRWOOD, in the county of LANCASTER. The mine has been recently proved, and found to be 3 feet 2 inches in thickness, and of excellent quality; it is commonly called, or known, by the name of the **UPPER MOUNTAIN MINE**, and extends over about 1000 statute acres, which will be divided into suitable lots.

The property is situated between the towns of **Blackburn** and **Clitheroe**, and is intersected by a branch of the **East Lancashire Railway**.

A section of the borings may be seen, by applying to Mr. Boose, **Rufford-hall**, **Ormskirk**; or to Mr. Whitte, coal viewer, **Charnock Richard**, **Chorley**—to either of whom proposals may be sent.

IMPORTANT TO CAPITALISTS.—TO BE SOLD, an excellent SLATE and SLATE QUARRY—VARIEGATED MARBLE and HONE QUARRY—COPPER and LEAD MINES—all situated on the same property, within a short distance of the shipping harbour of **Portmadoc**, **Carmarvonshire**.

The above works are situated on a farm called **Croesawr-uchaf**, in the parish of **Llanfrothen**, in the county of **Mertioneth**, about seven miles distant from the shipping harbour of **Portmadoc**, and about two and a half from the railway of the **Festiniog Slate Quarries** to the port. They are near the celebrated quarries of **Festiniog**, which are well known throughout Europe; and it hath been ascertained, by competent judges, that this slate vein is of the finest quality, the very productive vein worked by the **Welsh Slate Company** at that place, of which **Lord Palmerston** and other noblemen are partners, which send about 500 tons per week of fine slate to the market. The vein is about 70 yards wide, and very advantageous for working, being situated on the brow of a hill, and the rubbish thrown down, where there is a depositary of 300 or 300 yards deep for it, without causing any trespass. The quality is good, splits well, and is of a beautiful blue colour. Slates of the largest size are made from it, and slabs also, of large dimensions. Thousands of fine slates, worked to sizes, and of beautiful patterns, are now ready on the bank.

The proprietor has ascertained most positively that no other slate quarries in **Wales** can produce such beautiful specimens from so near the surface, and where so little money has been expended.

The **MARBLE and HONE** adjoins the slate quarry, and some splendid specimens of variegated marble and hone have been already made from it.

The **COPPER and LEAD MINES** are about a quarter of a mile from the slate quarry, and the metals are of superior quality, and likely to become very productive.

There is the greatest facility for carrying on operations at all the works, which may be done with little expense, as few or no machinery will be required. A sawing and planing engine may be worked by water, just below the quarry.

Satisfactory reasons will be given why it is sold.

For further particulars, and to treat for the same, apply (postage paid) to Mr. Richard Jones, printer and auctioneer, **Dolgelly**, **North Wales**, where specimens of the slate, marble, hone, copper, and lead, may be seen.

"B. I." the Gazette Office, Parsonage-lane, Bath, WROTE "I. H. & S." Post-office, West Bromwich, on May 19th, and requests a reply.

MINING SHARE OFFICE.—B. BAWDEN, of No. 2, BANK CHAMBERS, LONDON, MINE AGENT, of 21 years' standing, begs to call the attention of PURCHASERS of MINING PROPERTY to the following SHARES at this particular time—viz.: **United Mexican**, **Bolanos**, **Del Monte**, and **Tamara**, as there is, from present appearances, every rational prospect for purchasers realising from 50 to 200 per cent., in a few months, on their outlay.—W. B. will be most happy to give every information respecting these and other mining shares.

Attendance daily from Ten to Four o'clock.

MINING OFFICES.—ESTABLISHED FIVE YEARS.—**THOMAS P. THOMAS** begs to inform his friends and the public, that he has REMOVED from No. 18, Threadneedle-street, to No. 3, GEORGE-YARD, LOMBARD STREET, LONDON (late Messrs. Phillips and Tiplady's).

N.B.—Dealer in English and Foreign Funds, Mining, Railway, Gas, and other shares.

MR. R. TREDINNICK, THREE KING'S COURT, LOMBARD-STREET, LONDON.

Continues to DEAL in every description of MINING, RAILWAY, BANKING, INSURANCE, CANAL, and OTHER SHARES.—Statistical information afforded gratuitously, upon personal application.—MONEY ADVANCED upon the above securities.

MR. JAMES STRIDE, MINING, SHARE, ESTATE, PARLIAMENTARY, and GENERAL AGENT, begs to announce, that he has REMOVED, from 35, Charing-cross, to 37, SPRING-GARDENS.

Mines Inspected and Reported on.

JAMES LANE, MINING SHARE DEALER, 75, OLD BROAD-STREET, LONDON.

WILLIAM W. TAYLOR & CO., MINERAL SURVEYORS, MINING SHAREBROKERS, No. 2, ROYAL EXCHANGE-BUILDINGS, LONDON.

WILSON & FRASER, 2, WELLINGTON-BUILDINGS, LIVERPOOL, and 13, EXCHANGE-PLACE, GLASGOW, have always ON SALE PIG-IRON, BAR-IRON, RAILWAY CHAIRS, and RAILWAY BARS.

REUBEN FARLEY, MINE AGENT, AND LAND AND MINE SURVEYOR, WEST BROMWICH, NEAR BIRMINGHAM.

MONEY.—MESSRS. KILLICK & CO. (late WINSTANLEY, KILLICK, & Co.), SHAREBROKERS, inform their friends and the public, they make IMMEDIATE ADVANCES, to any amount, on the deposit of English and Foreign Railway Shares, Scrip, and Debentures, upon exceedingly advantageous terms; they also BUY and SELL every description of STOCK and MINING SHARES, at much less commission than usually charged.

6, Bank Chambers, opposite the Bank of England.

LAND DRAINAGE.—Mr. W. HUGHES, Civil Engineer, begs to announce, that he undertakes the INSPECTION of ESTATES to be DRAINED, the SETTING OUT of DRAINS, the RECLAMATION of LAND, and the GENERAL SUPERINTENDENCE of WORK, at a FIXED CHARGE PER ACRE, according to the extent of land, and full particulars may be had on application to Mr. Hughes, C.E., at the office of the Mining Journal, 26, Fleet-street, London.

CAMBORNE CONSOLS MINING COMPANY, OFFICES REMOVED TO 29, POULTRY, LONDON.—May 11, 1848.

CORNISH MINING COMPANY.—OFFICES, No. 10, MONUMENT CHAMBERS, LONDON.

BANWEN IRON COMPANY.—Established 1846—FOR WORKING THE IRON MINES on the BANWEN ESTATE, in the neighbourhood of SWANSEA, Glamorganshire. The mines are now in work, and further CAPITAL being REQUIRED for erecting additional FURNACES, a portion of the reserved shares of 25 each may now be had, on application at the office of the company. A deposit of £2 per share to be paid down, and the remainder by two instalments, at intervals of two months. This company offers peculiar advantages, and the profits are estimated to return a dividend of 25 per cent.

Offices, 23, Threadneedle-street. S. P. HARRIS, Secretary.

LYNVI IRON COMPANY.—Notice is hereby given, that the ADJOURNED GENERAL MEETING of the shareholders of this company will be HELD at 21, Moorgate-street, on Thursday, the 24th June inst., at One o'clock precisely.

By order of the board, F. W. GIBBON, Secretary.

NISTER DALE IRON COMPANY.—Notice is hereby given, that an EXTRAORDINARY GENERAL MEETING of the proprietors of shares in this company will be HELD at the office of the company, 10, Old Jewry Chambers, in the city of London, on Monday, the 26th day of June inst., at One o'clock in the afternoon precisely, for the purpose of considering the propriety of immediately winding up the affairs of the said company, and of agreeing to an offer made for the disposal of the said company's property in Germany, by amalgamation with other works; or of otherwise disposing of the same, as well as of the remaining property of the said company.

June 9, 1848. F. W. EMERSON, Clerk.

NATIONAL PROVINCIAL BANK OF ENGLAND, 112, Bishopsgate-street, London, June 13, 1848.—The directors of the National Provincial Bank of England hereby give Notice, that a DIVIDEND, at the rate of 6 per cent. per annum, for the half-year ending the 30th of June, 1848, will be PAYABLE on the company's stock, on and after the 18th of July next, when the dividend warrants will be obtained at the company's office, 112, Bishopsgate-street, or at the different branches. The transfer books will be closed on and after Monday next, the 19th inst., until the dividend becomes payable.

By order of the court of directors, DAN. ROBERTSON, Manager.

EUROPEAN GAS COMPANY.—Notice is hereby given, that the ANNUAL GENERAL MEETING of the proprietors will be HELD on Thursday, the 6th day of July next, at the hour of Two o'clock precisely, at the office of the company, 39, Finsbury-circus, London, pursuant to the provisions of the Deed of Settlement.—Two directors retire by rotation, but, being eligible, will be proposed for re-election.

London, June 17, 1848. By order of the board, J. B. GREAVES, Secretary.

ANGLO-MEXICAN MINING ASSOCIATION, 5, Broad-street-buildings.—The ANNUAL GENERAL MEETING of the proprietors of the association for assisting in working the Mines of Mexico, and other parts of Spanish America, will be HELD at the company's office, 5, Broad-street-buildings, on Wednesday, the 6th day of July next, at One o'clock precisely.

ALFRED GODFREY, Secretary.

ASTURIAN MINING COMPANY.—Notice is hereby given, that the ANNUAL GENERAL MEETING of the registered proprietors of shares in this company will be HELD on Friday, the 30th day of June inst., at the company's offices, 9, Austinfriars, for the purpose of receiving the directors' report, and transacting other business.—The chair will be taken at Two o'clock precisely.

By order of the board, K. MACKENZIE, Secretary.

ST. JOHN DEL REY MINING COMPANY.—Notice is hereby given, that the TWELFTH HALF-YEARLY DIVIDEND, being 12s. 6d. per share on the shares of this company, will be PAYABLE at this office on Monday next, the 12th inst., and every succeeding day, between the hours of Ten and Four.

Forms for claiming the dividend may be obtained at the company's office, and must be left three clear days for examination, previous to payment.

8, Tokenhouse-yard, Lothbury, June 7, 1848. W. ROUTH, Secretary.

TRELEIGH CONSOLIDATED MINING COMPANY.—The directors hereby give Notice, that a MEETING of the shareholders will be HELD at the office on Monday, the 3d July next, at One o'clock precisely, at which the accounts for three months, ending 30th June inst., will be submitted.

87, Old Broad-street, June 15, 1848. WM. NICHOLSON, Secretary.

ASSAYING AND ANALYSIS.—MR. MITCHELL begs to inform the MANAGERS, &c., of MINES, SMELTING-WORKS, and MANUFACTORIES, that he still continues to CONDUCT ASSAYS and ANALYSES of all PRODUCTS, metallurgical and manufacturing, at his LABORATORY, 23, HAWLEY-ROAD, KENTISH TOWN, LONDON.

To which address communications are to be forwarded.—Instruction in all branches of assaying and analysis as usual.

VENTILATION OF COAL MINES.—BIRAM'S PATENT ANEMOMETER.—This INSTRUMENT has now been SUCCESSFULLY EMPLOYED by many eminent engineers, to whom reference can be given.

For particulars, apply either to the inventor, B. BIRAM, Esq., Westworth, near Rotherham; or to the maker, John Davis, Derby, manufacturer of miners' dials, clinometers, safety-lamps, and all kinds of instruments appertaining to the engineer, are made and kept in stock.—Repairs promptly attended to.

J. DAVIS, Irongate, Derby.

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		1838	192 3 0	87 1 4	13 10 2	395 11 1
		1839	165 11 10	74 1 9	11 3 1	346 2 3
		1840	116 7 6	54 0 10	7 18 10	296 13 3
		1841	111 6 8	49 10 0	7 10 4	247 4 5

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F. FERGUSON CAMERON, Secretary.

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Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY	Royal Asiatic—14, Grafton-street	2 P.M.
TUESDAY	Statistical—12, St. James's-square	8 P.M.
	Chemical—Society of Arts, Adelphi	8 P.M.
	Linnean—Soho-square	8 P.M.
	Civil Engineers—25, Great George-street	8 P.M.
WEDNESDAY	Microscopical—21, Regent-street	7 P.M.
THURSDAY	Royal Society of Literature—4, St. Martin's-place	4 P.M.
	Medico-Botanical—22, Sackville-street	8 P.M.
FRIDAY	Philological—12, St. James's-square	8 P.M.
SATURDAY	Royal Botanic—Inner Circle, Regent's park	3 P.M.

INSTITUTION OF MECHANICAL ENGINEERS (BIRMINGHAM).

June 13.—J. L. MCConnell, Esq. (Vice-President), in the chair.

The first paper read was by the CHAIRMAN, "On the Balancing of Wheels." The proper balancing of the wheels of locomotive engines was stated to be a very important matter, as most of the railway accidents, in cases where the carriages had jumped off the line of rails, were to be attributed to a want of proper balance in the wheels of the engines. The merit of the discovery of the proper balance was due to Mr. G. Heaton, of Shadwell-street Works, Birmingham, who, when employed by the Earl of Craven, had occasion to examine a lathe which jumped in a very violent manner, and in the pulley of which he discovered a want of balance. This defect he remedied, and the lathe afterwards worked properly. Mr. McConnell went on to detail instances of Mr. Heaton's experiments, and then read from the *Times* and other newspapers, some accounts of accidents on railways, which appear to have resulted from the cause to which he had alluded. After an explanation of the central forces of wheels, the speaker proceeded to exhibit, by models, proofs of his statements; passed on to describe the usual manner of balancing the wheels of locomotive engines, which he contended was an improper one; and concluded by illustrating, by another model, the necessity for obtaining an accurate balance in the piston-rod. On this subject, however, he promised to read a paper at a future meeting. Mr. MIDDLETON expressed his gratification at the notice which was now being directed to the subject, and said that hitherto much prejudice had existed against the discovery. The same description of model as that now exhibited had been shown to the engineers of the London and Birmingham Railway 10 years ago; and although an engine which oscillated very much had been balanced for that line by himself and Mr. George Heaton, and had been perfectly cured, yet no further notice had been taken of the matter. He trusted, however, that Mr. Heaton was now about to reap the reward of his discovery. Mr. MCConnell said, it was about seven years since Mr. Heaton came to him with an explanation of the system, and he (Mr. McConnell) then balanced the engines on the Gloucester line. He believed that this was the first railway in England on which the invention was used. After some further conversation, in which Mr. Cowper, Mr. McConnell, and Mr. Middleton took part, a vote of thanks was given to Mr. McConnell for his paper.

The next paper was "On an Express Engine," by Mr. Samuel. This engine was one to which a carriage, capable of conveying 48 persons, was permanently attached. It was intended for use on branch lines of railway, and the first was in use on the Tiverton branch of the Eastern Counties line. The principal points of advantage over ordinary engines were lightness of build, increased speed, and great economy. The paper was copiously illustrated by drawings of the engine. After a lengthened conversation, the general opinion of the meeting appeared to be that the engine was one admirably calculated for branch lines of railway, where the work was of a light description.

This paper was followed by one read by Mr. CRADDOCK, on his condensing engine, and which was chiefly occupied by answers to some questions put, and objections raised, at the last meeting. Mr. CRADDOCK, at the request of Mr. Clift, entered into a detailed explanation of a beautiful model of his engine, and, after a lengthened discussion, a committee was appointed to test the value of the invention, by ascertaining the power of Mr. CRADDOCK's engine as compared with that of one of the ordinary make equal in size.

The last paper was by Mr. SMITH, of Dudley, "On the Recent Lamentable Boiler Explosion at Hartshill Works, near Dudley." After a description of the size and character of the engine, the paper remarked upon the smallness of steam room, as compared with the heating surface, and stated that the cause of the explosion was the continued escape of steam, which lessened the quantity of water in the boiler, and suffered the plates to become red-hot. It appeared, in the course of the discussion, that the boiler had only been erected about six months, and that it was a very bad one, and that the explosion had taken place chiefly in the line of the rivets. The thickness of the plate was 7-16ths of an inch. Mr. Smith stated his conviction that there were many boilers in the neighbourhood of Dudley in the same dangerous condition. A vote of thanks was given to Mr. Smith for his paper.

After a suggestion by Mr. Crampton as to the printing of the minutes, the proceedings were closed by a vote of thanks to the chairman. —*Midland Counties Herald.*

* We have received a detailed report of the proceedings of this meeting, with copious extracts from the papers submitted, which we shall give entire in our next Journal.

EXPERIMENTS ON COAL AND GAS.

"On the Value of Gases from different Coals, and the price of Light in different places; also, on a new mode of estimating the consumption of Gases, &c., and of estimating illuminating power." By A. Fyfe, M.D., F.R.S.E., F.R.S.S.A., Professor of Chemistry, &c., King's College, Aberdeen. Illustrated by apparatus.—*Transactions of the Royal Scottish Society of Arts.*

The first part of this paper referred to the illuminating power and durability of gases obtained from English caking coal, from English parrot coal, and from Scottish parrot coal, and with which gases the towns in England and Scotland are supplied, and consequently to the value of these gases for affording light. Taking the illuminating power, and the durability, and consequently also the value of the gas from English caking coal, with which Newcastle and many other towns in England are supplied, as the unit of comparison, Dr. Fyfe stated, that he found the illuminating power of the gas from the English parrot coal, such as that from Yorkshire and Lancashire, to be, on an average of numerous trials, 1.75, the durability to be 1.12, and hence the value, bulk for bulk, as 1.85. The value of gas from the different kinds of Scottish parrot coal varies considerably, according to the place from which the coal is obtained; but, as in the larger towns in Scotland, a mixture of coals of different quality is employed, the gas in these towns is generally very nearly of the same quality. Taking the average of all the trials made at Edinburgh, Glasgow, Greenock, Dundee, and Aberdeen, the illuminating power was found to be 3.25, the durability 1.58—thus making the value very nearly 5, compared with the English caking coal gas as 1, and 2.7 to the English parrot coal gas as 1; in other words, to light an apartment to the same extent, and for the same time, by similar methods of consumption, the quantity of gas from Scottish parrot coal required, being as 1, the quantity of gas from English parrot coal would be more than double, and that from English caking coal would be five times as great. Dr. Fyfe then alluded to the value of these different kinds of coal for affording gas, and consequently for affording light by the combustion of their gases. In ascertaining this, the quantity of gas given off from the coals is taken into account, along with the value of the gases themselves for affording light. In this way he has fixed the value of the coals as follows:—English caking coal being 1; that of the English parrot coal is on an average 2.3; and that of the mixture of Scottish parrot coal, as used in different towns, as 6. In the second part of the paper Dr. Fyfe alluded to the methods of finding the value of coal gas, for the purpose of illumination, and more particularly to a new mode of determining the durability; in other words, the time required for consuming a certain volume of gas, and consequently the consumption in given times; and by means of which, also the specific gravity of the gas could be ascertained. From numerous experiments which he had performed, he had come to the conclusion, that when coal gases are burned from the same burner, with the same height of flame, the consumption is as the square roots of the pressure necessary to keep up the combustion, at the length of flame fixed on; and that, consequently, the time required for the consumption of equal volumes is inversely as the square roots of the pressure. He had also come to the conclusion, that the durability—in other words, the time required for the consumption—depends on the specific gravity, and that the same law is applicable; consequently, the specific gravity being known, the consumption can be determined; as the consumption being determined by the pressure, the specific gravity can be ascertained—the rule being, the specific gravity is inversely as the square roots of the pressures necessary to keep the gases burning, from similar burners, at the same height of flame. Dr. Fyfe stated, that he had put these different rules to the test of experiment, with gases which he had prepared from different coals, and also with the gases found in different towns, and he exhibited numerous tables, showing the very close correspondence between the results obtained experimentally, and by calculation. He then exhibited an instrument by which the durability and specific gravity could, by the rates stated, be determined. It consists of a jet burner, of the 40th of an inch in diameter, to which is adapted a scale for measuring the height of flame, and a pressure gauge for ascertaining the pressure under which the gas is burning, at the length of flame fixed on. In this pressure gauge is fixed a graduated scale, with a burner, by which the pressure can be read off to 100th of an inch. Along with this table was given, showing the consumption of gases in a given time—the time required for the consumption of equal quantities, and the specific gravities, according to the pressures indicated by the gauge. In the table the pressures ranged from 60-100ths to 200-100ths of an inch, which embrace all the pressures likely to occur with the jet-burner stated. Dr. Fyfe, in conclusion, alluded to a photometer, which, so far as he was aware, is not noticed in any publication, and which, he believed, was the invention of Prof. Bunsen. It consists of a paper screen besmeared with a solution of spermaceti in oil of naphtha, excepting at a part round the centre. A candle placed behind this, transmits light in such way as to make the part uncovered easily observed, when another light is placed in front of the screen, at a certain distance; according to the intensity of the light, the spot disappears, and the paper becomes uniformly of the same appearance. In using other lights, the distance at which the uniformity on the surface of the screen is occasioned, depends on the intensity of the lights; and thus, according to the usual law, the illuminating power of different light is determined by the square of the distances at which they are situated from the screen. Dr. Fyfe stated, that he had put this method to the test of experiment, and found it extremely accurate, and much more easily managed than the shadow test. He exhibited the screen in connection with the pressure-gauge burners, already described, by the use of which, the illuminating power, the durability, and the specific gravity of coal gases are very easily and quietly determined; and hence the value of an instrument of this kind to those travelling from place to place, with the view of ascertaining the value of coal gas in different towns; and of ascertaining the value of different kinds of coal for affording gas, and consequently for affording light by the combustion of their gases.

On the Winning and Working of Collieries.

BY MATTHIAS DUNN, MINING ENGINEER.

No. VIII.—Continued from the Mining Journal of the 10th June.

COAL SEAMS—THEIR THICKNESS AND DEPTH FROM THE SURFACE.

Before proceeding to discuss the manner of working, adopted in different parts of the kingdom, it may be well to submit a collection of sections, by way of showing the countless variety of seams, and that no general rule of working can possibly be made applicable to all. The idea of collieries being conducted upon principles handed down from ancient times, or according to local customs, probably deduced from the working of seams, not at all analogous to the present times, cannot obtain. Each individual seam ought rather to be dealt with, according to its peculiar thickness—nature of the roof and floor, the quantum of band or rubbish that attaches to it, the depth from the surface, the consequences of breaking the roof, its production of gas, and many other circumstances.

For instance, at the commencement of working the edge coals, lying at an angle of one in two, and, before the introduction of wheel carriages, the only resource that presented itself was the carrying of coals upon the backs of females, and exhibits the force of custom, when, in the year 1843, Lord Ashley's Bill found a great quantity of bearer women in the east of Scotland, employed in collieries, perfectly applicable to railways, and which were universally applied elsewhere; indeed, until very recently, women were employed in a similar manner in the French coal mines. My object, therefore, in these observations, is to show, that amidst such diversity of circumstances, it need not be surprising, that many collieries are known to be worked under practices highly disadvantageous to the proprietor, and in which other systems might be profitably introduced; having, at the same time, a due regard to those customs which are founded upon reason and principle, otherwise the innovation upon established customs, by practices uncongenial to the case, is sure to be attended with mischievous results. As the object of improvements is to lessen labour, there is less difficulty in their introduction than is generally understood, provided it be done at a seasonable time, and that reasonable terms be offered to the workmen. Undoubtedly, their natural course is to make the best bargain they can, for adopting the altered system; but few persons, now a days, will long resist reasonable terms, and they can easily understand how they are advantageous otherwise.

SYNOPSIS OF THE NEWCASTLE COAL-FIELD.—I have before observed upon the influence of bands in the coal, as well as the continual thickening and thinning of the carboniferous strata, and that these, together with local causes, tend to confuse inquiry as to the identity of coal-fields, although they may be known to be continuous. The late Mr. John Buddle presented to the Natural History Society of Newcastle a paper upon the subject, in which he desired to classify the various seams worked in different parts of the district, many of them appearing under changed names and altered circumstances. In the course of that paper, Mr. B. remarked, that "almost all the seams of coal deteriorate in quality, as well as are more subject to pyrites, whenever sandstone happens to form the immediate roof"—consequently, that the best coals have a roof of shale. The Newcastle coal-field is divided into two large districts, called the Tyne and Wear.

The following are some of the most interesting sections, acquired in the course of my own practice:—The *Bentley* estate, in a depth of 30 yards, contains 18 ft. 3 in. of workable coal, interspersed with fire-clay, clunch, ironstone, blind coal, shale, &c., and which must be borne in mind as being equally so distributed in the following cases:—In *Ayrshire*, at *Caprington Colliery*, there is, in a depth of 35 ft. fms., 10 ft. 5 in. of coal; at *Fairlee Colliery*, in 122 fms., 9 ft. 4 in.; at *Kilmarnock*, in 62 fms., 18 ft.; at *Skerriemore*, in 124 fms., 20 ft. 6 in. In *Cheshire*, at *Bollington Colliery*, in 70 fms., 13 ft.; at *Poynton and Worth*, 12 ft. in 236 yards. In *Cumberland*, and *Ewenrigg*, 9 ft. in 80 yards, and in 56 fms., 7 ft. 5 in.; at *Harrington*, in 93 fms., 8 ft. 3 in. In *Durham*, at *Brantham Colliery*, in 92 yards, 14 ft. 2 in.; at *Bushblades*, in 82 fms., 29 ft. 7 in.; at *Cornforth*, in 112 yards, 9 ft. 8 in.; at *Coxhoe*, in 170 yards, 13 ft. 7 in.; at *Gateshead Fell*, in 133 fms., 36 ft. 3 in.; at *Harbour House*, in 74 yards, 7 ft. 4 in.; at *Jarrow*, in 390 yards, 22 ft. 7 in.; at *Lambton*, in 94 fms., 23 ft. 9 in.; at *Lanchester Common*, in 106 fms., 28 ft. 9 in.; at *Stella*, in 77 fms., 28 ft. 11 in.; at *Whitwell*, in 102 yards, 12 ft. In *Fife*, at *Cowden Beath*, in 74 fms., 23 ft. 10 in.; at *Halbeath*, in 77 fms., 21 ft. 6 in.; at *Wemyss*, in 213 fms., 72 ft. 8 in. In *Lancashire*, at *Leigh Strata*, in 90 yards, 27 ft.; at *Great Lever*, in 180 yards, 22 ft.; at *Longworths*, in 294 yards, 44 ft. 9 in.; at *Low Green*, in 372 yards, 9 ft.; at *Openshaw and Bewick*, in 294 yards, 6 ft. 3 in.; at *Orrell Mines*, in 154 yards, 14 ft. 6 in.; at *Pendleton*, in 507 yards, 16 ft. 8 in.; at *Pickling's Green*, in 182 yards, 22 ft.; at *Pemberton*, in 230 yards, 16 ft. 8 in.; at *Platt Bridge*, in 179 yards, 18 ft. 6 in.; at *Prescott*, in 277 yards, 30 ft., and in 185 yards, 22 ft. 6 in.; at *Sankey Brook*, in 459 yards, 39 ft.; at *Shevington*, in 270 yards, 14 ft. 9 in.; at *Soden House*, in 44 yards, 10 ft.; at *Springfield*, in 120 yards, 17 ft.; at *Stoneclough*, in 218 yards, 20 ft. 2 in.; at *Tarbock*, in 204 yards, 22 ft. 6 in.; at *Wigan and Blackrod*, in 555 yards, 54 ft. 6 in.; at *Alkington*, in 268 yards, 22 ft. 6 in.; at *Arley*, in 160 yards, 12 ft. 3 in.; at *Ashton*, in 195 yards, 21 ft. 4 in.; at *Bickershaw*, in 333 yards, 45 ft. 9 in.; at *Cowley Hill*, in 200 yards, 7 ft. 6 in.; at *Douglas Bank*, in 77 yards, 18 ft. 6 in.; at *Halshead*, in 156 yards, 35 ft. 10 in.; at *West Houghton*, in 118 yards, 15 ft. In the *Lothians*, at *Birsie*, in 40 fms., 26 ft.; at *Brunstane*, in 124 fms., 18 ft. 8 in.; at *Edmonstone*, in 108 fms., 20 ft. 6 in.; at *Sheriff Hall*, in 58 fms., 16 ft. 6 in.; at *Skeltie Muir*, in 55 fms., 24 feet 4 in. In *Northumberland*, at *Broom Hill*, in 60 yards, 11 ft. 2 in.; at *Callerton*, in 40 fms., 13 ft. 9 in.; at *Cowpen*, in 123 fms., 14 ft.; at *Elswick*, in 114 yards, 7 ft. 6 in.; at *Midgholme*, in 53 fms., 21 ft. 5 in.; at *Montagu Main*, in 93 fms., 8 ft. 5 in.; at *Newcastle Town Moor*, in 66 fms., 28 ft. 2 in.; at *St. Anthony's*, in 135 fms., 23 ft. 11 in.; at *Sleekburn*, in 88 fms., 11 ft. 6 in.; at *Walker*, in 150 fms., 20 ft. 5 in. In *Staffordshire*, at *Bentley*, in 166 yards, 37 ft. 1 in.; at *Blakelock*, in 314 yards, 27 ft. 9 in.; at *Bucknell*, in 246 yards, 43 ft. 7 in.; at *Gret's Green*, in 127 yards, 55 ft. 8 in.; at *Handly*, in 217 yards, 28 ft. 9 in.; at *Handley Green*, in 198 yards, 34 ft. 6 in.; at *Hoecker Hill*, in 116 yards, 39 ft. 9 in.; at *Sneyd*, in 120 yards, 23 ft. 8 in.; at *Wednesbury*, in 126 yards, 53 feet 5 in.; at *Wolverhampton*, in 115 yards, 67 ft. 5 in. In *North Wales*, at *Argoed*, in 101 yards, 44 ft. 6 in.; at *Baghill*, in 175 yards, 42 ft., and in 172 yards, 37 ft. 8 in.; at *Brymbo*, in 181 yards, 45 ft.; at *Coed Talon*, in 136 yards, 21 ft.; at *Flint*, in 123 yards, 15 ft. 10 in.; at *Greenfield*, in 85 yards, 13 ft.; at *Mold*, in 80 yards, 18 ft.; at *Moslyn*, in 226 yards, 53 ft. 8 in.; at *Moreton*, in 376 yards, 14 ft. 2 in. In *Yorkshire*, at *Gelder Road*, in 30 yards, 64 ft.; at *Lord Fitzwilliam's*, in 654 yards, 56 feet 9 in.; at *Haig Moor*, in 140 yards, 8 ft.; at *Grove*, in 90 yards, 6 ft. 9 in.; at *Snipe Thistle*, in 60 yards, 4 ft. 11 in.; at *Sheffield*, in 238 yards, 25 ft. 6 in.; at *Swinton*, in 105 yards, 6 ft. 9 in.; and *Wath Wood*, in 105 yards, 4 ft. [To be continued in next week's Mining Journal.]

GEOLOGICAL DISCOVERY.—Not far from the right bank of the Nicolaïskai in the Government of Tobolsk, in Siberia, a rich mine of stones has been discovered in the midst of the establishment for the washing of auriferous sands. These stones present a perfect resemblance to diamonds, except that they are a trifle less heavy and less hard, although harder than granite. Specimens of the stones have been deposited in the Imperial Museum of Natural History of St. Petersburg, and Russian mineralogists propose to call them *diamantoids*. —*Galignani's Messenger.*

RELIGION IN A COAL MINE.—A new publication, by Charles Knight, under the title of *The Voice of the People*, relates the following pleasing anecdote, as occurring in a coal pit:—"In 1843, Mr. Tancred was appointed commissioner on the part of the Crown, to the mining district of South Staffordshire, to inquire into the state of the mining population generally. He had an interview with a butty, or sort of middleman between the mine-owners and the miners, belonging to the Oak Farm Mine; and a conversation ensued between them, which reveals a state of feeling not undeserving of notice. After relating a disaster that had occurred in the pit, the butty said, 'Excepting this accident, we have been very fortunate in these pits; and, one reason, the men think, is because we meet together to pray every day during the dinner hour.' And the men like that custom do they? 'Yes,' the men think there are fewer accidents than where there are no prayers, and where swearing is allowed, which is not allowed in our pit. Men who have gone back to work in other pits have come back here for this reason; and their wives force them to come back, because they think they are safer here. They meet in church fellowship, and sing and pray as if they were all one family.' Do the men work as well, or better, since you introduced some attention to religion amongst them? 'I believe they are the best servants. If a man wishes to do right to God he will do right to man.' Do you take notice of irregular conduct out of the pit? 'We cannot see into the heart; but a man would not be allowed to join in singing and praying, unless we think he is living as a man ought to do. We cannot look after them when they are away from the pit; but, if I had a choice, I would always take a good man rather than an irreligious one.' Describe how they proceed at the prayer time. 'About one o'clock the drink goes down the pit; and, if a man is not at the place of prayer in 10 minutes after, he forfeits his drink. They sing and pray, and ask a blessing on what they are going to have, and they then sit down in the road (one of the excavated passages of the mine), and eat their dinner and drink the beer; and, after dinner, one reads out of the Scripture and explains it, and tells the others what the preacher has said about it.' Churchmen or Dissenters? Catholic or Protestant? none can fail to see that there is a germ of good in such a church of the mines, rough and primitive though it be."

THE CONWAY AND MENAI TUBULAR BRIDGES.

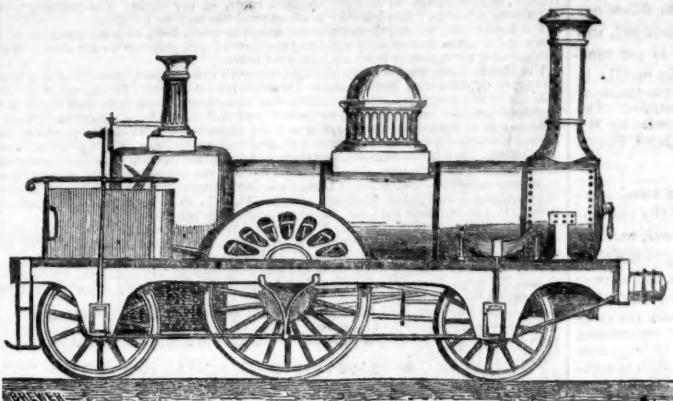
Our attention has been drawn to several communications in the *Manchester Guardian*, of the three past weeks, on the subject of the designing of the Conway tubular bridge. The first emanates from Mr. Bateman, of Manchester, in which he finds fault with the speech of Mr. Stephenson, at the dinner at Conway, as not granting to Mr. Fairbairn a due share of the merit. He states that that gentleman was first consulted by Mr. Stephenson on the 14th April, 1845, the railway act not having received the Royal assent until the June following; that Mr. F. was authorised to experimentalise to the extent of 500*l.*, and that the successful results are due to the minute details of the experiments, and the valuable deductions of Mr. Fairbairn, aided by the mathematical acquirements of Mr. E. Hodgkinson. He, however, acknowledges the original idea to have been Mr. Stephenson's, and which, with the confidence he exhibited in his reliance on the ingenious conceptions of others, do him the highest honour, but seems to think he somewhat detracts from the justly due merits of others. Mr. Stephenson replies to this, quoting a letter of Mr. Fairbairn's, dated October, 1846, in which the latter gentleman fully acknowledges the original idea to be Stephenson's, and, moreover, states that he may rely on Mr. F.'s best efforts to support such claim. To this Mr. Fairbairn rejoins, granting all that is claimed as to the original idea, but here he says he must stop, as the working out of that idea, the development of the principle, and the greater portion of the construction, were the results of his labours. He further says, the original idea was for a cylindrical tube, supported by chains, which he always opposed; and it was only by a long series of inductive reasoning, and experimental research of his own, that the form of the Britannia and Conway tubes was established. There is also an implied threat to publish the whole of the correspondence on the subject if necessary. Now, it does appear to us a subject of great regret, that two men of eminent scientific attainments, who have jointly projected a work, which will immortalise their names, and having produced a novel and gigantic specimen of bold engineering skill, and who have conceded to each other absolutely all that share in the transaction which they individually claim, should so far descend as to be consenting parties to a newspaper controversy, which, to whatever length it may go, will never alter the facts of the case, which are now well known to the scientific public. Mr. Scott Russell, who, as enjoying the intimate friendship of all the parties, has watched the progress of the experiments, and is thoroughly acquainted with all the facts, which we heard him describe one evening at a meeting of the Society of Arts—a communication from him also appeared in the *Railway Chronicle* of Saturday last, the 10th inst., and from which we will shortly extract, in the writer's own words; he says, "At an early period in the history of the Holyhead Railway, Mr. R. Stephenson found himself placed in the great difficulty of having to cross the Menai Straits, and being interdicted from interfering with the navigation, by the use of an ordinary arch, he was obliged to resort to some new expedient of railway resource. A suspension bridge, like that already erected by Telford, was the obvious expedient—an expedient, however, which the experience of the dangerous vibrations of that bridge must necessarily have led a wise engineer immediately to reject. Something as flat as a suspension bridge, as high and level below, but as rigid and inflexible, as to be proof against the storms of an arm of the sea, and the concussions of a railway train and locomotive engines, remained to be invented. This difficult problem Mr. Stephenson was the first to solve; he found that to make the platform of such a bridge sufficiently strong, its parapets on both sides must be formed of a rigid material, and of such depth as to rise high above the top of a locomotive engine. He next found, that for lateral strength it was necessary that they should be strengthened at the top, and tied together by what would form, as it were, a roof to the roadway; thus then the roadway and the roof formed the bottom and top of a long tunnel, of which the parapets, raised to a great height, had become the sides, and the first idea of the bridge was evolved. The Conway bridge, as now executed, is precisely such a tube, and the conception and evolution are exclusively Mr. Stephenson's. Then it was that Mr. Stephenson required assistance; and, on consulting the scientific authorities, he found that the experiments made by Messrs. Fairbairn and Hodgkinson were the best authority to which he could refer for information on the strength of iron; certain preliminary experiments on model tubes were accordingly ordered by Mr. Stephenson, and Mr. Fairbairn was charged with their conduct, with a view of determining chiefly the best form and arrangement of materials for obtaining tubes of greatest strength. Mr. E. Hodgkinson's mathematical and scientific acquirements were also brought into requisition, and who successfully eliminated the law of strength and dimensions in an elegant and simple form. It appears, then, that the following three incidents were preliminary to the construction of the bridge—1. Mr. Stephenson struck out, and deliberately adopted the idea of constructing across the Menai Straits, a tubular bridge of wrought-iron, to carry the railway trains along the inside—2. That he directed Mr. Fairbairn to conduct a series of experiments, to determine the best form and arrangement of materials for giving the greatest strength and lightness to a wrought-iron tube of large dimensions—3. That he requested Mr. Hodgkinson to conduct a series of investigations, mainly to elicit the law which connects the strength with the different dimensions of the tube." Mr. Scott Russell then states, that it is unwise in Mr. Fairbairn's friends to claim for him a title of the invention, and is persuaded that Mr. Fairbairn himself would never do so. He has great practical merit as a maker of structures of iron; and feels it, no doubt, to have been one of the most fortunate events of his life, to have been called in to assist in carrying out in practice one of the most brilliant inventions of the age. Mr. Hodgkinson also feels just pride in having been selected to determine the mathematical law which should lead to the greatest certainty and precision to ascertain the precise dimensions that would give adequate strength with greatest economy. We do hope that each of these three gentlemen will rest satisfied with that deed of merit which the scientific world has justly awarded them, and not lessen it by unseemly squabbles about the spinning out an idea, or a fraction of time, as to the performance of an experiment. The line is expected to be opened next week. The *Banshee* has been ordered from Holyhead, to bring over the directors and their friends, to partake of a grand entertainment at Salthill.

BANKRUPTCY REFORM.—The crying abuses of the insolvent and bankruptcy laws, the method of carrying them into operation, and the system of fees by which the officials are paid, have for very many years been a topic of loud complaint by judges, juries, creditors, and every class who has been brought into collision with these courts of iniquity. In 1801, Lord Eldon, from his seat on the Chancery bench, expressed his strong indignation at the frauds committed under the bankruptcy laws, and his determination to suppress the practices; he said, "the abuse of these laws was a disgrace to the country, and it would be better at once to repeal all the statutes, than suffer them to be applied to such purposes. As frequently conducted in the country, they were mere stock in trade, on which commissioners, official assignees, and lawyers fattened, without any mercy to the estate; the system was necessary to us as great a nuisance as any in the land, known to pass under the forms of its law." Although some high minded men have endeavoured to procure the adoption of measures calculated to cleanse this Augean stable, and Lord Brougham's effort, of 1831, effected some good—much yet remains to be done to render them a channel for the transmission of justice to the community. We have now before us a pamphlet, containing four letters addressed to W. Hawes, Esq., chairman of the London committee for promoting the amendment of the laws of bankruptcy and insolvency, by C. Fane, Esq., one of the bankruptcy commissioners. Mr. Fane has been in this public service a quarter of a century, during which period he has been indefatigable in investigating the defects of the laws, and in proposing remedies. He now contends that the laws of 1803, 1839, and 1844, have given a fraudulent debtor greater powers for making away privately with his property; and by enabling him to make himself a bankrupt whenever he pleases, the law of debtor and creditor is in a worse state than ever it was. His proposed remedies are, in the first place, in an action to recover a debt by a single creditor, the insolvent debtor shall be allowed to plead the truth—that he is unable to meet all his engagements—and that on such plea the creditor may drop his action at law, and proceed in bankruptcy. If the debtor make a false statement, the composition is to be void, and any creditor may sue him as on a judgment debt. That to prevent a fictitious creditor taking a debtor's property, and thus cheating the bona fide creditor, it is proposed that no creditor of a tradesman shall be allowed to take his goods in execution at common law at all, but be confined to such remedies against the debtor's property as the bankrupt laws may give him—this would do away with favouritism and fraud. Mr. Fane then reviews the whole system of the Sheriff's Court, from the ignorant country gentleman appointed for a year, his under-sheriff (a lawyer), and the bailiffs and followers under him; exposes the base and heartless extortions which take place under it, and recommends the entire abolishment of the fee system, the abandonment of irregular remuneration as a stimulant to exertion, but to rely on proper salaries, a sense of duty, and hopes of promotion, as an efficient substitute.

ENCROACHMENT OF THE SEA.—The slow, and unnoticed, but gradating variation which is continually taking place on our coasts is truly surprising. According to Mr. Lyell, when the inn at Sheringham in Norfolk was built, in 1805, the spot chosen was at a distance of 50 yards from the sea, which was, from previous observation of its rate of encroachment, calculated to take 70 years to reach it; no allowance was made for the slope of ground being from the sea, in consequence of which the waste was naturally accelerated every year as the cliff grew lower—there being at every successive period less matter to remove, as portions of equal area fell down. Between the years 1824 and 1829, no less than 17 yards were swept away; and there is now a depth of 20 feet, sufficient to float a frigate, at one point of the harbour, where, 48 years ago, there stood a cliff 50 feet high.

NEW SYPHON.—We understand that a scientific gentleman of this town intends to bring before the *sarans*, in August, an improved siphon, which will go far to remedy the comparatively useless ancient instrument which would transfer water merely. This invention, we understand, will lift water—for instance, from a canal into a water cart; this will, indeed, be an interesting article for the mechanical section of the association, and cause the name of its discoverer to go down to posterity.—*Swansea Herald*.

THE "JENNY LIND" LOCOMOTIVE ENGINE.

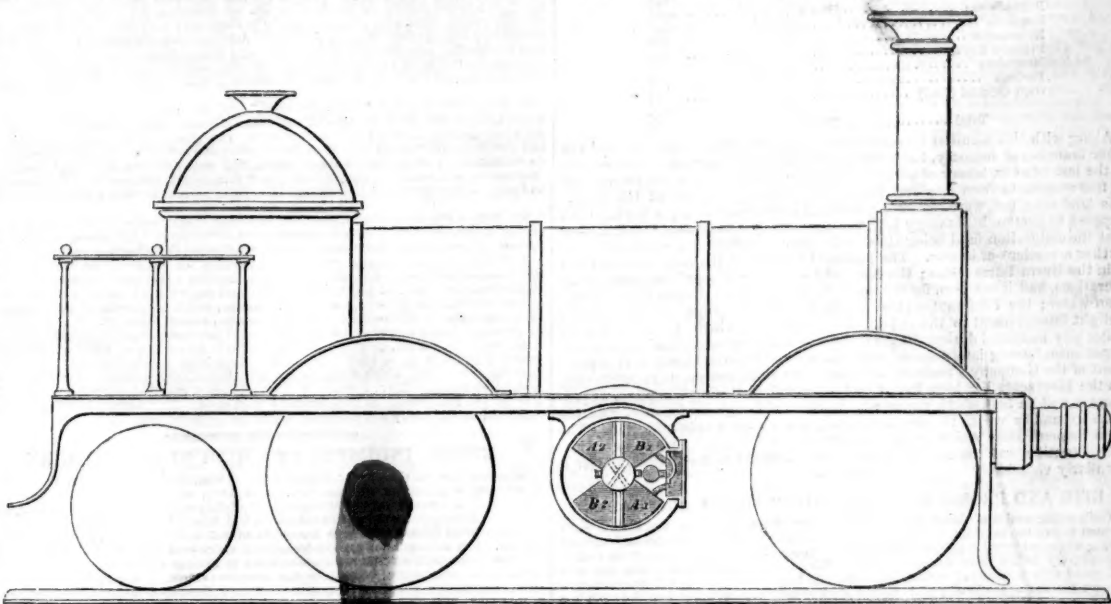


We are indebted to our contemporary, the *Railway Record*, for the subjoined engraving of the "Jenny Lind" class of engine, now working on the Midland Railway, and a report of the first highly successful trial of which will be found in the *Mining Journal* of the 13th of May—performing the journeys at the average rate of 52 miles per hour, consuming only 33 lbs. of coke per mile; whilst the other engines tried consumed 44 lbs., and only accomplished 39 miles per hour.

DIMENSIONS.

Diameter of cylinder	.....	15	15
Length of stroke	.....	20	
Driving-wheels	.....	6	0
Carrying-wheels	.....	4	0
Length of couplings	.....	13	6
Size of fire-box	.....	3	6 long.
		2	6 wide.
Depth of grate-bars	.....	4	9
Length of boiler	.....	10	6
Diameter of ditto	.....	3	7
		124	2-in. tubes.
Diameter of chimney	.....	0	13
Diameter of blast-pipe	.....	0	4
Area of fire-box	.....	80	square feet.
Area of tubes	.....	720	—800 square feet.

THE "CAMBRIAN" LOCOMOTIVE ENGINE.



We this week place before our readers an engraving of a section of the new locomotive engine, on the Cambrian principle. The principal feature in the application of this engine to locomotive purposes is the advantageous arrangement it admits of, which the following description will show.—The cylinder, it will be seen, is divided into two compartments, and to the blocking, on the one side, is attached the steam-box, with the slide-valve, which being in almost immediate connection with the chambers of the cylinder, the steam ports are considerably reduced in length, thus occasioning less waste of steam than with ordinary engines. The piston consists of a shaft, working in journal stuffing-boxes on either side of the cylinder; to this piston-shaft are attached two radial arms, fitted with metallic packings, admirably adapted, making the piston steam-tight, and dividing each compartment of the cylinder. Through the centre of the piston-shaft are two passages (shown by the dotted lines in the section)—thus the steam being admitted into the chamber, A¹, passes through the passage to A², and, for the reverse stroke, to B¹ and B²; a reciprocating movement is thus produced by the simultaneous action of the steam on both arms of the piston, in contrary directions. To the piston-shaft is attached a double crank, or beam, the Cambrian presenting the advantage of employing two straight driving axles and conveying the power of the engine direct by single rods, attached to each crank on the axles, in lieu of coupling the piston-rods to other rods, and connecting them to a cranked axle, as is now done with locomotives of the common construction. There being fewer parts required, consequently less friction—exerting the power at the same time in opposite directions, and on four driving-wheels, instead of two, which, as is proved, avoids oscillation, and from the judicious placement of the weight of the engine—from these combined advantages the Cambrian seems destined to take the lead in locomotive engineering—it also admitting of greater velocity being attained, with less liability of derangement or injury to the parts.

We purpose, in our next, to enter more minutely into the merits of the patent Cambrian engine, which has now been well tried, the makers, Messrs. H. Crosley, Son, and Galsworthy, of Emerson-street, Southwark, having many satisfactory testimonials of their efficient and economical working; and now subjoin the following notice, from the *Bradford Observer*, respecting the first locomotive, upon the Cambrian principle, made with the permission of the patentees, at the Albion Works, Bradford:—"On Thursday afternoon thousands of spectators witnessed the novel spectacle of a splendid new locomotive passing through the streets from the Albion Works of Messrs. T. Thwaites and Co., Thornton-road, to the station of the Leeds and Bradford Railway. A trial trip was made with it on Saturday afternoon. The train reached the Skipton station (18 miles) within 10 minutes of an hour from leaving Bradford, including several short stoppages by the way. The return trip was made in about the same time, without the slightest casualty, or the exhibition of any weak points about the locomotive. This is the first locomotive ever made upon what is called the Cambrian principle. The peculiarities of its construction consist in segmental cylinders, placed horizontally beneath and at right angles with the boiler; into which cylinder pistons are fitted, the centre parts or shafts of which work on separate bearings, between the front and centre wheels, and on the ends of these piston-shafts are placed double cranks or beams, from the opposite ends of which pass connecting-rods to the crank-pins on the leading and centre driving-wheels, on each side of the engine. The pistons communicate an oscillating motion to the double cranks or beams, the lengths of which are so adjusted as to cause the driving-wheels to make whole revolutions. By this arrangement the strain of the working parts is so balanced, and the pressure and resistance so equalised, that the engine moves on with such extraordinary steadiness, that all dangerous oscillation at high velocities is completely obviated. The vibratory piston-shaft and double crank, the two connecting-rods, one end of which moving in an arc, the other describing an entire circle, present a beautiful mechanical movement, and give to the engine a novel and pleasing appearance."

AERIAL NAVIGATION.—We have on a former occasion noticed the suggestions of Mr. Pitter, of Launton, near Bicester, Oxon, for the construction of an aerial ship of large size, capable of carrying many passengers and goods. He proposes to have a large and light vessel divided into chambers, with an engine-room in the centre. This is to be rendered buoyant in the atmosphere by a cylindrical balloon of 60 feet diameter, and 120 feet long, terminated by hemispheres. This will contain 452,172 cubic feet; and allowing the buoyant power of a cubic foot of hydrogen in the atmosphere at 1 oz., it will be capable of sustaining upwards of 12½ tons: should this not be sufficient, the balloon might be enlarged, or two might be employed. With a single balloon he proposes two pairs of paddle-wheels, somewhat similar to those for a steam-boat, with a fan-tail wheel at the stern to steer by. With one balloon on each side, he would have only two paddles to be placed on the deck, and a balloon on each side.

BRISTOL AND EXETER RAILWAY.—The Tiverton branch of this line was opened on Tuesday last, when a general holiday was made in the neighbourhood.

RAILWAY PROPULSION BY COMPRESSED AIR.

A working model of a railway—the trains on which are propelled by compressed air—is laid down in the grounds at the Rosemary Branch, Peckham; and the working of which we have had an opportunity, during the past week, of witnessing. The iron tube is 2½ inches in diameter, cast with a longitudinal opening and a groove on one side, to receive the edge of an elastic valve, composed of vulcanised caoutchouc; this is kept in its place by an iron plate, bolted on to a flange, allowing just sufficient space for the passage of the coupler, connecting the piston with the carriage. An iron reservoir is placed at a short distance from the end of the tube, and communicating with it by means of a connecting-pipe and stop-cock; into this reservoir the air is forced by a pair of air-pumps, worked by a Cambrian engine—a description of which appears in previous column. The line of railway is 450 ft. in length, 18 in. between the rails, and terminates with an incline of 1 in 30. The air was compressed on each experiment which we witnessed to about 30 lbs. on the superficial inch; as the area of an internal section of this tube is about 4½ in., the propelling power would be 147 lbs. The carriage employed weighed 5 cwt., and was loaded with pig-iron to rather more than one ton; and, on every occasion which we witnessed, it was carried to nearly the top of the incline—the compressed-air only acting on 200 ft. of the tube, at which distance the piston is arrested in its course, and the carriage proceeds from the momentum obtained. There are many disadvantages in this model which would be avoided in a working railway, laid down on the principle; and the patentees claim for it a superiority over other atmospheric systems, from economy in first cost of tube—half the size and weight being sufficient, as compared with one dependent only on atmospheric pressure. They propose, also, to preserve the compressed air to a considerable extent, by effecting a communication between the several sections of tube, and power reservoirs at the stations, which are proposed to be from three to five miles apart. The working of the Cambrian engine was highly satisfactory; the action is direct and simple, and, being extremely portable, will, we have no doubt, prove of great utility in many works where the steam-engine has not hitherto been brought into requisition.

SOUTH WALES RAILWAY BRIDGE.—The lamentable occurrence which recently took place, the destruction of the railway bridge across the Usk at Newport by fire, led to an anticipation that, on the reconstruction of the bridge, some less ignitable material than wood would be brought into requisition. Such, however, is not to be the case. The chief engineer of the Great Western Railway, Mr. Brunel, has made a survey of the wreck of the bridge as it now stands, and has come to the conclusion, that it shall be reconstructed on the same plan, and of timber. The chief local engineer, Mr. Owen, having received instructions to this effect, Messrs. Rennie, Logan, and Co., the contractors, will proceed forthwith with the rebuilding. Fortunately for them the principal portion of the original structure will be still available. A vast amount of labour and expense was expended in driving piles into the bed of the river; and, as the fire did not consume the piles below high-water mark, all new drivings will be avoided. Besides this, though the bridge was destroyed as a whole, yet the abutments on either side of the river are still available, even to an extent into the river of two or three arches; therefore, although it was at first feared that the opening of the line, which was in a forward state, would be delayed two years in consequence of the fire, there are now grounds for supposing that six months, or twelve months at the furthest, will see the bridge reconstructed. It is to be hoped, however, that some procedure will be adopted to render any future construction proof against the ravages of fire. Many means have been suggested. Among others we have heard it stated that the contractors will employ some surface coating upon the work, as each part may be constructed. Thick coatings of whitening are spoken of, and "rough cast" is also mentioned as a preservative.—*Sun*.

LOSS OF THE PENINSULAR AND ORIENTAL STEAM-SHIP "ARIEL."—The announcement of this unfortunate disaster was received by the secretary of the company on Saturday afternoon. The *Ariel* was employed on the Mediterranean, Peninsular, and Italian service, and left Genoa for Gibraltar and Southampton on the 2d of last month, with a number of passengers and a full cargo. On the morning of the 2d, she was steaming at a speed of 18 knots per hour, when suddenly it was discovered that she was running on to a reef, known as the Mal di Vatro, situated 12½ miles from Leghorn. Her engines were instantly stopped—but, before there were time to back astern, she struck with tremendous force, knocking in, it is stated, part of her bottom, for she shortly filled. By the aid of the steamer's boats, the whole of the passengers and crew were saved. The steamer and cargo are valued at 50,000*l.* The *Ariel* was one of the finest and fastest of the company's fleet: she was constructed of iron, and built by Messrs. Ditchburn and Mare, Blackwall; the engines by Messrs. Penn, of Greenwich. Tonnage, 950 tons; engines, 300-horse power. She was under the command of Captain Caldwell, an active and efficient officer. The *Ariel* having frequently made the quickest passage ever known between Alexandria and Malta, her withdrawal from the station was much regretted by the commercial class in Egypt, who are looking with some interest for a renewal of the contract between the Admiralty and the company.

and ore, intermixed throughout. In the 35 fm. level, west of the sump winze, the ore contains an abundance of mudiic, capel, and spar, with a small proportion of black and yellow ore.

HOLMBUSH.—Capt. W. Lean (June 13) reports.—The lode in the 132 fm. level, west of the diagonal shaft, is split in several small branches, which are composed of spar, mudiic, and spots of copper ore. The lode in the 120 fm. level south is 5 ft. wide, composed of spar, prlan, and lead, worth 54 per fm.; the lode in the rise, above this level, is 4½ ft. wide, producing saving work; the lode in the 110 fm. level south is 4 ft. wide, composed of quartz and lead, worth 44 per fm.—ground very favourable for exploring. The lode in the 100 fm. level south is 2 ft. wide, composed of prlan, spar, and stones of lead—giving work; the flap-jack lode, in the 100 fm. level east, is 3 ft. wide, with two good walls, between which are several small branches of spar, mudiic, blende, and spots of copper ore, in the middle of a beautiful white killas strata. The lode in the 90 fm. level south is 20 in. wide, composed of soft spar, prlan, flookan, and stones of lead.

KIRKCUDBRIGHTSHIRE.—The agent (June 10) reports.—In the 50 fm. level, west of Stewart's shaft, the lode is 34 ft. wide, in a kindly rock—a small rib of ore coming in on the south side; the north lode, in the same level west, is 2 ft. wide; the branch of lead on the north wall is not taken down. In the 40 fm. level, west of Keith's shaft, the lode is 18 in. wide—good stones of lead coming down from the roof, and the lode opening; in the 40 east, on the caunter, no improvement as yet. In the 30 fm. level end, west of Keith's, the lode is 4 ft. wide, with a branch of ore on each side—a kindly lode; the 30 end, east of Stewart's, is much as last reported—say 6 cwts. per fm. We have put the little wheel to draw from Keith's this week, and it works and answers well. We have also put the incline into Stewart's shaft again, so that we shall be able to draw there directly. At Tenotrice, the men have cleared out the old open cast, and commenced on the lode; it runs a little to the east of north, composed principally of carbonate of lime in a hard, blue, kindly killas, which, from its quarry-like appearance, looks as if we should have softer ground as we get into the mountain, which rises rapidly over it.

SOUTH WHEAL TRELAWNY.—Capt. W. Jenkin (June 12) reports.—We are still driving the cross-cut west of Snell's engine-shaft, in the 30 fm. level, with ground favourable. We are also sinking Snell's engine-shaft below the 30 fm. level, and cutting ground for bearers and cistern for fixing lift—ground favourable. We have a great deal of water discharging from cross-cut.

TRELEIGH CONSOLS.—Capt. William Symons (June 10) reports.—In the 120 fathom level, east of Christo's, the lode is about 2 ft. wide, but little ore. Garden's shaft, below the 100, is sinking in the country. In the 100, west of ditto, the lode is 2½ ft. wide, producing good stones of ore—not to value. The 90 west is cross-cutting south to a part of the lode, which we hope to see next week; the 90 east is cross-cutting north to cut a north part of the lode. In the 80, west of ditto, the lode is 18 in. wide, with good stones of ore—not to value. In the 70, west of ditto, the lode is 2 feet wide, worth 104 per fm. In the winze, below the 60 west, the lode is 2½ feet wide, with some ore—not to value. In the 50, west of ditto, the lode is 20 in. wide, worth 71 per fm. In the adit east, on the Wheel Parent lode, the lode is 2 ft. wide, with stones of ore only. The adit cross-cut, north of engine-shaft, is driving to cut the Wheel Orphan lode. We have cut the cross-ore in the 120 east, and hope shortly to see the lode east of it, which will decide the fate of Christo's.

WEST WHEAL JEWEL.—Captain R. Johns (June 12) reports.—No lode taken down in the past week in any part of the mine on the West Jewel lode. In the deep adit, west of Quarry shaft, on Tolcarne tin lode, the lode is 2 ft. wide, producing good stones of tin; the stopmen have been cutting in south. In the 12 fm. level, west of the stopes, on the same lode, the lode is worth 204 per fm. The ground will be set on tribute in a day or two.

WEST WHEAL MARIA.—Capt. Rodda reports.—At the western engine-shaft, the ground in the cross-cut in the 74 fm. level, is much the same for driving as last reported. The lode in the 34 fm. level, west of Vivian's shaft, is without important alteration.

WHEAL ANDERTON.—Capt. James Carpenter (June 15) reports.—As we drive west in the 80 fm. level, the leader on the north wall very much improves; it is nearly solid, 16 in. wide, and the other part of the lode we carry is good work. We have not stripped down any of the south part of the lode referred to in my last report, as it is too large for a common end; therefore, I shall leave that part standing until we drive a few fathoms further, as it will be more convenient to do so when we finish the cutting of the plat. The winze sinking under the 70 is also producing good work, and apparently improving in depth; the lode in the 70 end west continues just as last reported on, as well as the various pitches in the back of the 70. The improvement in the bottom of the 60, noticed last week, holds out well, and bids fair to produce a great deal of ore from that level to the deeper ones. I shipped 9 tons of ore on Tuesday last, and hope to have an increase in our next parcel, which we are preparing for as fast as circumstances will admit of.

WHEAL TRELAWNY.—Capt. Samuel Nicholls (June 13) reports.—We have resumed sinking Phillip's shaft under the 62 fm. level, where the ground is favourable; in the 62 fm. level south, the lode is worth 127 per fm.; this level north, which is again being driven, is worth 67 per fm. The lode in the 52 north is 15 in. wide, composed of can and lead—worth 84 per fm.; in this level south, the lode is very similar to my last report. The lode in the winze, sinking under 52, is still large, and worth 224 per fm. The lode in the 42 north is 2 ft. wide, composed of can, spar, and lead—worth 74 per fm. Our stoping department, throughout the mine, is yielding a fair quantity of ore. At Trelawny's shaft, in cutting the plat in the 52 fm. level, we are proceeding very satisfactorily. I cannot speak of any change in the 22 cross-cut east. At the north mine, the lode in the 30 fm. level, north of Smith's shaft, is 18 in. wide, composed of hornspar, can, and lead, worth 54 per fm., and the ground is favourable for driving. We sold yesterday, to Messrs. Michell and Son, 93 tons of lead ore, at 144 ds. per ton.

FOREIGN MINES.

ALTEN MINES.—The following is the estimated produce for April and May:—							
Mines.	APRIL.			MAY.			
	Tons ore.	Per ct.	Tons copper.	Tons ore.	Per ct.	Tons copper.	
Raipas	55	6	3-30	63	7	4-41	
United Mines	37	6	2-22	40	6	2-40	
Old Mine	24	6	1-44	26	6	1-56	
Ryper's	5	6	0-30	54	6	0-33	
Michell's	10	6	0-60	8	6	0-48	
Mancur's	34	5	0-17	34	5	0-17	
New Lodes	4	7	0-28	4	7	0-28	
Cole's	1	4	0-04	1	4	0-04	
Powder-house	0	0	0-00	2	4	0-08	
Church	0	0	0-00	2	3	0-06	
Total	129		8-35	155		9-81	

Mining Report, from the 20th April to the 30th May.

Raipas.—The prospects are much improved since the date of my last report. In the 20 fm. level, easterly on Labouchere's lode, a small irregular lode, containing good bunches of purple ore, has been intersected; it appears to belong to some of the metalliferous deposits from No. 11, but at present it does not promise much permanency. We hope, about the latter end of this month, to commence driving on Labouchere's lode towards the north-west, and under the 15, where the lode has lately improved in a material degree. In this level, a small cross-ore removed the lode about six feet; and after driving this distance, principally in dead ground, a rich, and apparently permanent, bunch of ore was discovered. Labouchere's lode shows evident signs of improvement in depth, the lode is becoming more regular, and the ore has lately been in greater quantity. We shall force the 20 fm. level in this direction, as much as possible, for the purpose of exploring this important part of the mine in depth. The workings in the 10 fm. level have also developed themselves favourably, and an evident improvement has also taken place in this part of the lode. We are now stoping up the bottom part of the level, previous to recommencing our exploratory operations towards the north and west. The 5 fm. level has been suspended for some time past; but should the improvement in the deeper workings continue, we shall probably be obliged to continue this level still further towards the north-west. The stopes on Carr's lode is deteriorated, and the men are now employed in the 5 fm. workings, at shaft No. 2, where the lode is comparatively rich, and the prospects are extremely good. From this part of the mine we now get some valuable returns, and hope to do so for a long time to come. The whim and machinery erected here fully answer the purposes for which they were intended, but the ground in the run is extremely dangerous; and, during the summer, we shall be subject to great expense in securing it. We are still subject to great inconvenience from the ice collected in this large open space. We are at present jiggling the shaft smalls, and hope the percentages of our future deliveries to the smelting-house will show a good improvement; the quantity will probably be less, but the quality will be better; and I confidently expect that the month's returns of copper will also hereafter show an increase. On the whole, the prospects of this mine have undergone an important, and, I hope, permanent, improvement since my last report.

United Mines.—The prospects of these mines continue to improve, and we expect hereafter to make better returns. The lode under the 10 fm. level is still making profitable returns; and at Woodfall's, the tributes have been rather more successful. The old workings in this mine are still full of ice. At Hoskins's, some small, but profitable, returns are made on tribute, and the few hands employed make satisfactory progress in developing the lode. At Ward's, another new lode has been discovered in the side of the mountain, about 5 fm. above the old lode, worked in 1839; this lode is small but promising, and has hitherto left a fair profit on the cost expended in opening it.

Old Mine.—Our progress in this mine is highly satisfactory, and the prospects continue favourable.

Ryper's.—The operations have been confined to tributes, which have been remunerative. As the summer advances, we hope to further explore the numerous lodes found at surface.

Michell's.—All our best workings are still enveloped in ice, and the greater part of the summer will elapse before they can be resumed; the tributes, in the meantime, continue to make small but profitable returns from outer parts of the mine.

Mancur's has also been worked very partially on tribute; but, with more exploratory work hereafter, we still hope to be successful.

New Lodes.—The lode in Mathiasendal has developed itself more favourably than we had expected, and, at present, it promises to become a valuable branch of our establishment. After the thaw takes place on the mountains, we shall recommence the exploratory workings on the new lodes, discovered last autumn. I expect, however, that we shall not be able to resume operations on the Melsvig lode before the middle, or latter part, of July.

Cole's.—At the date of my last report, I had determined on suspending operations here; but subsequent improvements in the nature and size of the lodes, have induced me to continue the workings for a short time longer, although we are at present working at a

trifling loss. The lode is now upwards of 4 ft. wide, with nodules of rich copper pyrites in limestone; and, on the whole, wearing a most kindly and enticing appearance.

At the Powder House and Church Lodes, the operations have been confined to tributes, and very partial; but we intend to increase them as the summer advances.

Old Mine.—We have now set the excavators and stamps to work, but in consequence of the breakages in the ladders last autumn, the supply of water is not sufficient for the whole of the machines. We will, however, do our best this summer, without putting up to any extra expense. A thorough repair of the water-course will cost at least \$2000; but this must be postponed until the stocks of halvans, and other ores of an inferior quality, are collected in sufficient quantity, to remunerate you for the outlay. We have now had 12 vessels with coals, the unloading of which has taken about 100 men from their usual work; but, under these circumstances, the working of the mines is carried on as regular as we can expect. We have been subject to no inconvenience, and the returns continue good. As soon as this fleet is dispatched, the men will return to their usual employment, and we hope the produce will experience a corresponding increase.

BOLANOS MINES.—Extract from a letter dated Zacatecas, 12th April, received on the 7th June:—I had the honour of addressing you on the 4th inst., duplicate of which I beg herewith to enclose.—I have thought it better not to send the regular inventory at present, but to do so by the packet, fearful that this letter may not reach you, as I send it to Tampico, to be sent via the United States. Mr. Clement will, no doubt, have delivered to you the one made out to the end of December, 1847; and I now enclose you the summary of the general inventory made out to the end of March, 1848, which will show you the difference between them. You will observe that I have not calculated anything for the value of the buildings of the hacienda of Cinco Señores, having only taken at a low value available property that can be realised at those prices at any time, which I hope will meet your approval. I am happy to inform you, that at daybreak on the 10th inst., I succeeded in getting the water so low in the cross-cut of La Campana (1 vara high), that since then the workmen have been able to work. In the afternoon of the 11th, we succeeded in getting the water into the shaft; and during that night, and that of the 12th, we were able to take off one malacate to extract ore. The water rose about half a vara in the cross-cut, which we have got out in the day by the four malacates. As far as we have been able to see, we are not yet on the vein, as we are upon white quartz, but in a few days I fully expect that we shall meet ore. At present there is no water coming from the planes, but a small stream that we have cut in the east end of Guadalupe has filled up about a vara of plane No. 1; but this we can easily get out by the pumps, and then continue working the whole of the planes completely dry. I trust that in a few days the stream of water from the cross-cut of La Campana will lessen, and thus allow us to spare one malacate. Next week very little will be done, it being Passion week, and full of fast days; but I fully expect on Monday to begin operations, with at least 30 "parados" in each "quarto"; and that, when I next have the honour of addressing you, to inform you that all our difficulties have been overcome. The workings are looking about the same as when I wrote to you on the 4th—there is no improvement in the eastern planes. Last week we sank 24 varas in San Genaro, 34 were driven in Victoria cross-cut, and 24 in the east end of Guadalupe.

NATIONAL BRAZILIAN MINING COMPANY.

A meeting of the shareholders was held at the London Tavern, on Monday, the 12th inst., such meeting having been convened by Mr. W. R. Collett (the chairman of the company), and which was, in the first instance, advertised to be held at the offices of the company. From the circumstance of the meeting having been called by the chairman, without the sanction, or acquiescence, of two of the other members of the board, a counter advertisement appeared, to the effect that the meeting was not one of the company, but merely a private meeting.

W. R. COLLETT, Esq., in the chair.

The CHAIRMAN observed, that the object he had in view in calling together the shareholders, was to submit to them the results of his personal investigation of their accounts and the nature of their property, having visited the mine at a sacrifice of considerable time, and at an expense of 1000*l.* of the company's money, which he considered the shareholders were not only entitled to, but with which it was the incumbent duty of the directors to put them in possession. It was solely with this object that he had visited the property; but his acts having been repudiated by certain of the directors, although recognised by two absent members, Messrs. Reid and Irving, and as there had been not only a direct refusal, on the part of the minority of directors, to reimburse him for the expenses he had incurred, and, furthermore, that the instructions given by him when at the mines had been contumaciously, he felt there was only one course open to him—that of calling together the shareholders to render a report to them of his labours, and had been with the object of promoting the general good. He much regretted that the directors to whom he referred, Mr. Oxenford and Mr. Hamilton, should have taken the steps they had, by closing the doors, and thus preventing any shareholder from entering the offices, on whatever business might be their object. He was then ready to answer any inquiries, and to afford every information in his power; while he had deemed it prudent to commit to paper the remarks he felt called upon to make, so that there should be no misapprehension as to the nature of the proceedings, and that they might be to the benefit of the company. It was right he should observe, that, in proceeding to the mines, his object was not that of interference; but he considered he was perfectly right in giving instructions, if such were generally approved. The unanimous opinion expressed by all parties at the mine was that as opposed to the system observed, or the instructions sent out, by the Throgmorton-street party; and hence his presence, and the determination at which he had arrived, were hailed with satisfaction. It was, he (the chairman) observed, easy to mystify accounts, but those presented by him were such as might be deemed regular. As evidence of this, he pointed to the accounts, although in a minority of the number—he might observe, that they had dismissed the principal agents, in consequence of the honest course they had pursued in affording him facilities to effect the object he had in view.

From the written report, or "speech," made by the chairman, we collated the following results, which, with the abstract of the minutes of conference at the mine, embodied in our report of the proceedings, form the important features presented to the meeting; first, although the chairman once again expressed his regret that he had not availed himself of the opportunity to call on the directors, he did not forget them as applying to himself—the *ego* taking the lead. We will, however, proceed to the report in question. It appeared, that Mr. W. R. Collett (the chairman, and then a member of the Legislature) was unanimously elected as a director in March, 1847, some 15 months since; and upon taking his seat at the board, he was unanimously chosen chairman. The cash in hand at the time was merely 30*l.*, while there were deficiencies to the amount of 30,000*l.* During the 12 months after his accession to office, these liabilities were reduced more than one-half, by calls made on the proprietors, and the balance at the banker's had materially increased. Having time on his hands, and the interest of the shareholders at heart (being no longer a Member of the Legislature), he determined on visiting the mines; and having accordingly so done, he now submitted the results of his inquiries, and which would be found in the paper presented to the meeting, which he had caused to be printed for more general circulation.

The following is an abstract of the minutes made at a conference held at Cocoes, the 16th inst., 1848, when the directors were present, and were attended by Messrs. Oxenford, and H. L. Page, and Capt. Bate and Hitchens.—*Cubaiba.* It appeared, from a calculation of the receipts and expenditure of this portion of the company's property, the gross produce for 1846 was 99 marks, and that of 1847, 101 mks.—making together 200 mks.—the value of which, estimated at 40*l.* per lb., was 5220*l.*; from which, was to be deducted 5 per cent. for Government duty, and 5 per cent. for extra charges attendant on its transport, leaving a net produce of 4788*l.* The expenditure, calculated at an exchange of 27 per milire, gave 5434*l.* 17*l.* 10*l.*; to which was to be added—English tax, 2000*l.*; and a proportion of expenses in London—say, 250*l.*—giving a total expenditure of 7434*l.* 17*l.* 10*l.*, and showing an actual loss of 2705*l.* 17*l.* 10*l.* It was estimated that the average quantity of stone, or stuff, stamped during the period was at the rate of 45 tons per diem, or 27,000 tons—the produce of which did not exceed one-half of value of gold to the ton of stone so stamped: a trial was made during Mr. Collett's sojourn, with the view of fairly testing the quality of the stone, but the average did not exceed that named. In reply to a question put to Captain Hitchens, as to the stone in the mine being inauspicious, which had been represented to be the case, he declared the contrary to be the fact; and there was no ground to warrant an opinion that the returns of the present year would exceed that of 1847, he at once recommended to the commission the immediate and entire suspension of the works.

Cocoes.—From the calculation entered into with respect to this establishment, it appeared that the gross produce for 1846 was 89 mks., 232 mks. for 1847—together 321 mks.—the value of which might be taken at 2828*l.*; from which, however, was to be deducted 5 per cent. for the Government, 10 per cent. for the Brazilian proprietors, and 5 per cent. for the expenses of transport, leaving a net produce of 2428*l.* 17*l.* 10*l.* The expenditure, including the English staff (3000*l.*), and London expenses (500*l.*), would give 11,725*l.* 8*l.* 4*l.*, or an actual loss of 4996*l.* 8*l.* 4*l.*, which, added to that of Cubaiba, would give a total of 7722*l.* 5*l.* 5*l.* In the two years. The total quantity of stone extracted was estimated at 926 cubic fathoms, which, assuming 18 tons per cubic fathom, would give 16,668 tons—the produce of which, as rectified, would yield about 1400 tons of ore, or an excess of about 13 per cent. over that produced by the Cubaiba Mine. He (the chairman), in proposing to suspend the works, declared his opinion that the produce of the auriferous lode at Cocoes exceeds by more than threefold that of the Cubaiba Mine; and as to the quantity, it is not only inexhaustible, but most accessible, by virtue of the shallow adit. The stamps at present erected were calculated to crush 84 tons in the 24 hours, or 2420 tons monthly, and which, in the opinion of the chairman, should be extracted from the mine. Capt. Treloar, who has the management of the Morro Velho property, had accompanied him, and approved of the views entertained by him; and he felt it only his duty, in mentioning that gentleman's name, to bear testimony to the admirable manner in which that establishment was conducted, which it was with pleasure he stated that the utmost readiness was afforded him to inspect the accounts, and to possess himself of every information which might be useful to him in the course of his inquiries. Mr. Collett then proceeded to estimate the returns which may be calculated upon from increased workings, as by the application of 67 sets of borers, the present stopes might be largely extended. The produce, according to the average quantity hitherto obtained, would, at the rate of 2420 tons monthly passing through the stamps, amount to 10,000 tons annually, or 16,000*l.* net annually; while the addition of 19 stamp-heads would increase the net produce one-half, or bring it to 22,500*l.*; and a further addition of 12 stamp-heads, making only 44 at work, or doubling the present power, would yield 30,000 tons, without any reference to other auriferous bunches, or veins, which might be discovered in the course of the extended workings. It was conjectured, from the nature of the two small veins discovered, that others would be found, and that a junction would take place, and form a rich deposit at a few fathoms below the level of Irving's shaft; this would, however, be proved in the course of the present year, while the regular and certain produce of the mine was steadily proceeding. As regards the expenditure, he (the chairman) estimated the amount at 10,000*l.* per annum, including the London management, and was prepared to furnish the items in detail. The total black force, or negroes, employed would amount to 477, and the English to 23, making together 500. The net produce would be, with the present stamping power, 15,000*l.*, or with the increased number of 24 heads, 30,000*l.* net; thus affording a fair dividend in the former, and a very large one in the latter case, after deducting the 10,000*l.* expenses.

Rio de Janeiro.—This estate requires little notice; it is 53 miles distant from the scene of active operations, and can only be considered as being rendered efficient for the growth of *café* (Indian corn), sugar, oil, &c., and as a hospital, or union, for the aged and decrepit of the black force, which may be estimated generally at about 10 per cent., but who might be employed on the farm, and thus, by their labour, pay for their support; the active force should be removed to Cocoes. This document concludes, by the expression of the opinion of the parties present at the conference as to the value to be attached to the indefatigable exertions of the chairman. Such is a brief outline of the report, as prepared on the mine.

He (the chairman) had no hesitation in stating his opinion, that Cocoes was well situated, and held out the highest promise if properly worked, and the necessary force employed. It was only right to observe, with reference to the course he had pursued, although such was not recognised by two of his co-directors, that he had received letters from two other of his esteemed colleagues, who, in consequence of the failures last autumn, were obliged to be temporarily absent, expressing their anxiety to have his report on the mines, and offering to pay any reasonable sum for expenses, provided his exertions proved beneficial to the company, and this was all that he coveted, being interested in common with them in its success. He left England on 17th Dec., and reached Rio Janeiro on 31st Jan. last;

and, on his visit to the mines, had effected an arrangement, whereby a saving had been made of 400*l.* per annum. He (the chairman) had directed his particular attention to the geological and mineralogical features presented in England, Germany, Spain, and Switzerland, and considered himself perfectly competent to form a judgment. Having spent a month at the mines, he had drawn up the report, which he had read to the meeting, and which was unanimously agreed to by the agents and those present.

In reply to a question from a proprietor, as to the manner in which the loss referred to had been met, the CHAIRMAN replied, that out of the call made, amounting to about 28,000*l.*, one-half had been appropriated to the paying off certain liabilities, and the remainder applied to the working of the mine. The produce of Cocoes, at the present moment, was 2828*l.*; but, if the course recommended by him was pursued, such would be, as stated at the conference, considerably increased. As regards Cubaiba, the information he had acquired from parties knowing the mine well, and even the individual who had disposed of his interest therein to the company, was, that it was valueless.

After some discussion of no important character, there being no question before the meeting, it was moved by Mr. G. CHAMBERS, and seconded by Mr. D. DAVIDSON, that the report submitted by the chairman met with the cordial approbation of the shareholders, and that the same be received, adopted, and circulated; and, furthermore, that he be solicited to carry into effect his recommendations for the benefit of the association.

A brief acknowledgment of a vote of thanks to the CHAIRMAN, having been made, for the confidence reposed in him, with the assurance that, however Messrs. Oxenford and Hamilton might be inclined to oppose him, he should be ready to act in union with those gentlemen, if they would really look to the interests of the company, the meeting was dissolved.—It should be observed that, in the course of the observations by the CHAIRMAN, he expressed his readiness to take upon himself the office of superintendent, or manager, here or abroad, if that the sole powers were vested in him; and, in such case, he had no hesitation in stating his conviction that large profits would be realised by the proprietors.

JAMAICA MINING COMPANY.

At the annual meeting of adventurers, held at Mold, Flintshire, the accounts were examined and passed, showing—Balance last meeting, 88*l.* 8*l.* 4*l.*; ores sold, previous to this year's account, 5432*l.* 2*l.* 6*l.*; ditto 1847, 8681*l.* 18*l.* 4*l.*; profit on materials, 4*l.* 15*l.* 6*l.*—9318*l.* 4*l.* 8*l.*—By cost for twelve months, 3105*l.* 10*l.* 6*l.*; royalty due (previous year), 132*l.* 16*l.* 8*l.*; dividends, 5700*l.*; leaving balance at banker's of 379*l.* 17*l.* 11*l.*

The following captain's report was read to the meeting:—

Jamaica Mine, June 5.—The detailed statement of accounts for the last 12 months will furnish particulars of ground explored, ores raised, price per fathom and per ton, during that period. In the 35 fm. level west, about 30 fm. from shaft, we raised 17 cwts. ore, and in the rise, over this spot, are laying open tribute ground that will set at 80s. per ton—forebore unkindly. In the 43 fm. level west, forebore not congenial for ore—idle; in the rise, communicated to the 35, there are two men getting good wages, at 120s. per ton; in the 43 fm. level west the sump has been sunk, with a view of getting down to the junction of the sandstone with the limestone—suspended at present, in consequence of the water being too quick to be kept out by four men—ground congenial, with bits of ore occasionally; we consider this a desirable trial, and would recommend the prosecution of the same during the summer months by eight men; in the 43 fathom and level cross-cut, east and west on the vein, the ground very unkindly—idle. From the east and west rises, in the 35 fm. level east, nearly the whole of our ore has been raised; the ore is worked out in the western rise, and fallen off in the eastern rise, on setting-day let at 8s. 6d. per ton—at this time it would not be taken under 20s. per ton; there is a piece of ore ground between the eastern rise and Daniel's sump for about 30 fm. in length, which will set for about 30s. per ton; and about 12 fm. nearer the forebore we have ore ground for about 3 fm. in length, that can be raised at 20s. per ton—forebore kindly. In the 43 fm. level east we have had a little ore in different places, but not to value; there are three or four pitches, from 5 to 8 fm. over the roof, that will set at from 30s. to 60s. per ton—forebore congenial. At Taylor's shaft, 30 fm. south-west of cross-cut, we have intersected two joints or springs—we cannot speak as to the distance; we shall have to drive this cross-cut before we intersect the vein (Maes-y-safn), there being about 200 fm. between this shaft and the Maes-y-safn workings on the vein, with a quick rise of ground on the surface of about 15 fm., and a hill above to the north, which we infer has pressed the vein to the south, but would say, persevere with the undertaking. From present appearance, we cannot recommend the raising of more than 30 tons per month, and enable us to keep a reserve of ore for efficiently exploring the concern, there being several places where indications would justify an outlay.

SOUTH WHEAL TOLGUS MINING COMPANY.

At a meeting of adventurers, held at the mine, on the 5th instant, the accounts were examined and passed, showing—Balance from the last account, 431*l.* 14*l.* 10*l.*; labour cost for January, February, and March, 476*l.* 8*l.* 10*l.*; ditto April, and merchants' bills for the four months, 472*l.* 3*l.* 6*l.*—1380*l.* 7*l.* 10*l.*—By calls, 640*l.*; ores sold, 224*l.* 2*l.* 4*l.*; leaving balance against the adventurers of 516*l.* 4*l.* 9*l.*

A call of 50s. per share was made, and the following report from Captain William Francis was read:—

South Wheel Tolgus, June 5.—Michell's engine-shaft is sunk upwards of 4 fms. under the 12 fm. level, and we expect to reach the lode at another level in the course of three months. In the 12 fm. level about 32 fms. in length have been opened, which, with little exception, has been found unproductive. Some disappointment has certainly been felt from this circumstance; but, as yet, it would be premature to conclude that any decided failure in the lode has taken place, as there are grounds for believing that, by extending the 12 fm. level, and especially westward, ore will be discovered. A winze has been sunk about 3 fms. below the adit, at a distance of 24 fms. from the engine-shaft, and 3 fms. further than the 12 fm. level is yet driven, where the lode, in some places, is 4 ft. wide, and will yield about 4 tons of ore per fm. It is not so large in the bottom of the winze, but it has still a good appearance, and the ore is dipping westward. The adit level continues to be driven east, through a large lode, with some ore in it. Although we have not so far succeeded in placing the mine in the favourable position which the prospects in the adit level justified in expecting it to be by this time, it will be observed, that fair grounds exist for believing that it will yet become valuable; and we are pursuing those trials which are calculated to render it so, with the greatest possible dispatch.

CALLINGTON.—The quarterly statement of the accounts of this company has been circulated preparatory to the meeting to be held on the 28th inst., and we regret to observe that the very low price of metals has caused a loss on the quarter's operation. The accounts are extremely perplexing, owing to *credit* having been taken (a thing very unusual, indeed unheard of in other mines) for costs for working Kelly Bray, or the copper mine of the company. The following, however, is the result of our analysis:—The cost for January, February, and March, with sundry other expenses, amounts to 6212*l.* 6*l.* 11*l.* (this sum includes 1186*l.* 15*l.* 2*l.*, cost of Kelly Bray); the returns for lead for the like three months amount to 5004*l.* 11*l.* 6*l.*—showing a loss on the three months working of the lead department, of 711*l.* 5*l.* 5*l.*, after deducting the costs of Kelly Bray. The copper returns for three months are 1398*l.* 9*l.* 9*l.*, against a total cost (including engine, of 1500*l.*) of 2530*l.* 15*l.* 2*l.*—leaving a debt of 1231*l.* 5*l.* 5*l.*, which has been carried to the *credit* of the company.

ST. AUSTELL CONSOLS.—At a special general meeting of adventurers, held at the New Inn, Tywardreath, on 30th May, the accounts were examined and passed, showing—Balance from last account, 577*l.* 10*l.* 11*l.*; labour cost and materials for January, February, March, April, 132*l.* 8*l.* 9*l.*—189*l.* 14*l.* 8*l.*—By calls, 182*l.*; copper ore sold, 32*l.* 9*l.* 9*l.*—214*l.* 9*l.* 9*l.*—leaving balance in favour of adventurers of 244*l.* 15*l.* 1*l.* It appeared that the agents who inspected the mine could not agree on a joint report as to the propriety of further developing the lodes which have been cut in the adit level; and, as several adventurers were in arrears, to the amount of 101*l.*, it was resolved, that the prosecution of the mine be suspended on the following Saturday, on which day the existing contracts terminated, and that the pursuer be fully authorised to proceed against defaulters. Mr. Hodge, the pursuer; Capt. Sampson, the agent; Capt. Davis, and several other adventurers, having offered to increase their interest, with a view of giving the mine a further *full* and *fair* trial in the adit level, it was resolved, that a circular be sent to each holder of shares, requesting a decided answer as to whether he will relinquish his interest, or what number of shares he wishes to retain. It was also resolved that, as some adventurers had expressed a wish to take additional shares, and several persons desired to become shareholders, if they could obtain shares free from all incumbrances, that they should be allowed to do so. From the circular distributed by the pursuer, it appears that the holders of 49 shares, one-sixth of the mine

go down.—South Caradon is improved on the same lode to the 80 ft. level; they are also sinking a shaft some fathoms east of Caradon Wheel Hooper shaft, and not far off from the boundary of Wheel Hooper sett; in it they have a very promising lode—as fine a gossan as can be seen.—Caradon Wheel Hooper, too, is at a grand point of speculation—if we may call it so; but it appears to be no speculation. Their engine-shaft is sunk to the 58, and the cross-cuts are putting out both north and south, to cut the different lodes which pass through the sett; they have four cross-cuts driving—two in the 50, and two in the 58; they will intersect four distinct lodes in less than two months—one will be cut in the 58 in about a month; there is a course of ore in it gone down in the bottom of the 50, worth from 15s. to 20s. per ton; this lode is 4 ft. to 5 feet wide.—Gonamena is improved very much of late. I see no cause to doubt but that there are as good mines to be found here, as in any other part of the mining world.—J. S. St. Clair.

EAST ALVENNEY.—This mine is situated in the parish of Alverton, Cornwall. The shaft is sunk below the old workings on a most splendid course of tin. The lode has been opened, and worked by the old miners, from 500 to 600 fms.; and there is an excellent course of tin now ready to drive upon and stop away. From the ore which is in sight, I think it almost certain that a dividend would be paid in about four months, after recommencing the workings; and it would probably be about 1s. or even 2s. per share—there being only 512 shares in the adventure. There are three other lodes in the sett which might be brought into work successfully. The tin is of the richest quality in Cornwall—some having been sold at 50s. per ton. The mine is worked by water-power, which would make the monthly costs very trifling—probably not more than 60s. or 80s. This is certainly the most promising concern I know; and it is to be hoped that the works will soon begin again.

CORNISH MINES AND THE JOINT-STOCK COMPANIES' BILL.

SIR.—Whoever knows Mr. Wyld will acquit that gentleman of any design to injure the mining interests of Cornwall; but the unhappy clause, added by his intervention, and referred to in your last Journal, cannot, I think, fail to have that effect, whatever may have been his intentions. It is said, that a place, not to be named to "ears polite," is paved with good intentions; and it may be that those referred to may find a place in that category. The Joint-Stock Act contained a clause, wisely excluding mining companies from its extensive, tedious, and inquisitorial operations; and it is difficult to conceive a reason why a bill, having for its object the enabling joint-stock companies, in a bankrupt state, to wind-up their concerns, should have intruded into it a clause utterly at variance with the original statute—thus bringing disordered mining affairs within its scope, removable only by the same vehicle which carts off the rotten remains of bankrupt and insolvent companies.

I have not the means of referring to the bill, as it has passed the Commons, containing this obnoxious rider; but if it consists, as I am informed, of 126 sections, I can easily foresee the repugnance with which any simple-minded mining adventurer will regard so complex a piece of legislation, if it become the law of the land. We know how easily these matters are now arranged when the necessity arises; and we have recent instances, in the Vice-Warden's Court, in which valuable mining property has been preserved by a judicious combination of its equitable and legal powers. I have the misfortune to differ from the hon. baronet, whose letter appeared in your last Number—"that there is nothing in it which will affect the Cornish mines for good or ill."—Without being a lawyer, I have learned that a general Act of Parliament (as contra-distinguished from a private Act) must, by all judges and other administrators of the law, be taken judicial cognisance of, and that without being pleaded. Will not, then, the powers of the Statutory Court be greatly lessened?—and will not mines (the affairs of which are in a disordered state) be compelled to submit to this law? Pray attentively observe the imperative nature of the clause—"All associations, or companies, formed for working mines, or minerals, shall be liable to the operations of this Act."

The section 68 of the Joint-Stock Companies' Act, by which mines were excluded from its operation, has always been considered most favourable to the mining interests, and been prominently put forward in the prospectuses of proposed new companies. To repeal it would be "a heavy blow and great discouragement" to those interests; and, as a difference of opinion exists of its intent and meaning, I trust steps will be taken to strike out this "rider" from the bill in the House of Lords, following the prudent maxim—"Quod dubitas ne feceris." I, too, like your Truro correspondent, may be accused of "writing without knowledge;" but I cannot discover the "noble thought," or "dignity in action," which has prompted the introduction of the clause in question.

London, June 14.

STANNATOR.

CORNISH MINES AND THE JOINT-STOCK COMPANIES' BILL.

SIR.—I think that all the mining interest must feel greatly indebted to you for your exposure of the clause added by Mr. Wyld to the Joint-Stock Companies' Disolution Act, lately passed in the House of Commons, which, but for your watchfulness, would, in all probability, have become the law of the land, to the total destruction of the Cost-book Principle; and I would now suggest that, in using means for striking out this obnoxious clause, you should at the same time suggest the following clause being inserted, or words to the like effect, that there may be no longer any doubt as to the extent of this beneficial principle:—"The Cost-book Principle, as now used and practised in partnerships formed for the working of mines, minerals, and quarries of what nature soever, in the county of Cornwall, be extended to all parts of the United Kingdom and that the cost-book, and transfer of shares, and every other part or portion of the said principle, be admitted as evidence in all courts of law and equity, in the same way and manner, to all intents and purposes, as it is now used and received in the Vice-Warden's Court of the Stannaries of Cornwall—anything herein, or in the said recited Act, of the 7th and 8th Vic., cap 110, contained to the contrary thereof in anywise notwithstanding."

I must beg of you to accept my best thanks for your detection of Mr. Wyld's prejudicial clause, which would have proved ruinous to the mining interests generally.—AN OLD MINER: June 15.

CARN BREA MINES.

SIR.—I wish to draw your attention to the operations of the company formed for working these mines, which are admitted to be first on the list as to their magnitude, and the amount of profits which have been realised within a given space of time, and are now holding out large expectations. At the last meeting, it was determined that the present lease should be surrendered, upon Lady Basset granting a renewed one for the term of 21 years, when the question of future management was canvassed—the mine, although I admit properly, and I have no doubt honestly, conducted, being carried on only nominally upon the Cost-book System, as we have but half-yearly meetings, and we have no proper check on the merchants' accounts for supplies to the mine—indeed, as to the holding of a meeting of the adventurers on the mine, it is a thing never thought of; while I contend we are greatly over paying for a management, which is anything but efficient. We have, for instance, Mr. McDonnell—a very worthy man I admit—who was formerly with the Miners' Company, but who is now palmed on us as manager in London, at something like 3000l. a year; then we have our committee of management, some 3000l. a year; clerks, office expenses, &c.; in addition to which we have a purser (Mr. Pike) at the mines, who enjoys 1500l. a year; a supervisor, or managing agent (Capt. Lyle), at about 2000l. a year, and a lot of smaller adjuncts. I am glad to find you are directing the attention of your readers to the abuses practised under the so-called Cost-book System; and I, for one, would rather see the whole system exploded, than that such abuses should exist, as are practised under its name, and I trust that the shareholders in this mine will carry out the understanding which I consider was arrived at in our last meeting—to adhere to the system; to hold meetings on the mine; to have the merchants' accounts properly audited; the books examined by competent persons; and our financial affairs put upon a system whereby all errors may be avoided, and confidence fully established—which, I regret to say, is not the case at the present moment. I am well aware there is a power capable of swamping us, which is confined to a few hands, but I think they will see, on reflection, that the recommendation of the last meeting is for the good of "one and all;" and trust that it may be fully carried out—at the same time, I think it necessary the attention of the body of shareholders should be kept alive to the subject, which I have no doubt will be done through your columns.

Cornwall, June 13.

AN ADVENTURER.

EAST TAMAR MINES, AND MR. PERCIVAL JOHNSON.

SIR.—In your Notice to Correspondents of last week, you refer to a letter from "T. H.," Plymouth, condemning the system of management pursued at East Tamar Mines, and stating that "under the management of Mr. Percival Johnson, it would prove a most valuable undertaking." Sir, I do not for one moment dispute the words in italics. It is well known, that Mr. Johnson is manager-general for Finsbury-square—that his party were disappointed in not getting the mine at their own price—and their chagrin, doubtless, is not lessened, by finding the mine already paying its way, and at their not being able to make it a "valuable undertaking" to themselves, by getting some 5000l. a year for its management. Your correspondent's letter was meant to be mischievous, but, luckily for us, it carried with it its own antidote, in the naming of Mr. Johnson; and his injudicious friend has only to thank himself, if he has forced invidious comparisons. The question of "unmercifully" lowering men's wages, and of picking out the eyes of the mine, it is not my intention to notice. They involve serious charges, and I shall leave them to be answered by the manager, not doubting he can do it most satisfactorily; indeed, it is well known, that so far from "picking out the eyes" of the mine, more ore ground was opened during the first month's working than was taken away. I would briefly, as "T. H." has mooted the question of management, and attempted to injure East Tamar in the opinion of the public, look at the management and the results of Mr. Johnson's, or the Finsbury-square, mines, and then refer to East Tamar. First, let us take Tamar Consols, with a paid-up capital of 30,000l. Mine

working at a heavy monthly cost—paying many thousands a year to merchants—paying large monthly agencies in Devon—paying 6000l. a year for directors' and manager's salaries and expenses—and paying the shareholders—nothing! The Callington Mines, with a paid-up capital of 19,000l., paying nearly 2000l. per month for working cost, including merchants, agents, &c., paying the same directors, &c., near 6000l. annually, and paying the shareholders—nothing! Mendip Hills, employing a paltry staff of some 40 or 50 people, costs the shareholders near 6000l. per annum for same management, and costs them also repeated calls upon their pockets, with the only consolation of the "hope deferred" of Mr. Johnson.

Take Tincroft, Drake Walls, and the several other mines under the same London management; in the aggregate they pay some thousands a year to the lucky directors, &c., but not one sixpence to the shareholders.

Now, look at East Tamar: the old company laid out 30,000l. in machinery, &c.; the present, having purchased all, intend to work the mine for themselves; they have a committee, who give their services gratis—a word found in Johnson's, but not in "Percival's," dictionary; and they have appointed a manager at the mine, at a salary of 2000l. a year, chiefly with a view to order and purchase materials at the best and cheapest markets, and not to submit to the dictum of merchants. By this means, we hope to save double the amount of his salary; and here, Mr. Editor, is the sore place in regard to our management. The merchants think they have a "vested right" to charge exorbitant prices for their goods to mining companies, and will not quietly brook interference if caballing against an honest man can avail. Indeed, I question whether this pretended friend of Mr. Johnson be not a merchant in disguise. The London expenses of East Tamar amount to 500l. per annum, and that Mr. Johnson's party view with horror—a mine paying its way, and managed for 500l. per year. I am not surprised at; and I shall be more than surprised if it do not, ere long, read a lesson to the public upon which some profitable deductions may be made.

London, June 13.

A SHAREHOLDER IN ALL THE TAMARS.

GREAT WHEEL ROUGH TOR CONSOLS.

SIR.—About 18 months ago, I was induced, by the very extraordinary reports upon this mine, to come up from Truro, to be convinced, from personal inspection, whether or not these statements were exaggerated. Upon the mine I met a gentleman from London, who had taken a sett of the property, and was then directing the operations of opening, upon the back of the lode; he told me that three-fourths of the mine had been taken up by men of capital in London, and that the shares were then estimated to be of the value of about 25s.—at which price he had sold a considerable number. He asked my opinion of the mine, and I was free to confess that, in the whole course of my experience, I had never seen so splendid a lode at the surface; nor had I seen a locality from which I should expect such important results at a proper depth—that the shoddy pits (which had then been opened, I should think, three-quarters of a mile) presented all the best features I had ever seen in any mine; and that, if such failed of proving successful, we must forego any pretensions to mining knowledge. I told him, further, that I came up from Truro with an intention of giving a counter report on the mine, anticipating exaggerated statements had been made, and that unwary men had been entrapped. But I now was constrained to say, that every expression was more than borne out by the facts I had witnessed; and that I considered the speculators were wise and fortunate men.

Until the past week I have never again visited the mines, and have been enabled only to form a conjecture of her proceedings by the quotations of the value of the shares in the share list of the *Mining Journal*; and I have been surprised to find, that such were gradually falling into a heavy discount. I saw an expenditure of 17s. per share had been made—the which, added to the price the shares bore in the commencement—namely, 25s.—would have given a value of 42s.; whilst the price quoted was only 18s. Together with the nearly total absence of all reports upon the progress or indications of the mine, led me to suppose that the original expectations had not been realised. Having occasion lately to visit the Rough Tor district, I took the opportunity of visiting and inspecting the mine; and my surprise was greatly enhanced—instead of finding any failure to induce such silence, or diminution of estimated value, every step appeared to me to have justified a continual increase. The buildings and the machinery had been well and effectually erected; two shafts were sinking, to intersect the lode at 60 fathoms; and, throughout the whole of the ground then explored, every indication had been exceedingly good. From a very fair channel of ground at the surface, they had gradually passed through numerous branches, with a corresponding change of country, until they had, just prior to my seeing the mine, intersected and passed through a large and splendid branch (I should say, upwards of a foot in thickness), carrying excellent stones of copper ore. The whole country appeared mineralised, and the killas was of very fine quality, strongly indicative of approximation to a course of ore.

All these matters the more perplexed me, when viewed in connection with the diminished price of the shares; and I could only account for it by finding that the directors of the mine, being large capitalists, did not care to adopt the usual custom of keeping the mining public aware of these important results, which from time to time occurred, and the share list was left to take care of itself. At length, however, I observed a report of calls in arrears, and shares forfeited, in consequence of non-payment. This convinced me that there must have been, at least, a few persons in such adventure who would have gladly availed themselves of a fair and ready market; and, for the sake of mining in general, I cannot but deplore that the usual system had not been adopted. I am an old miner—I have every proper aversion to the system of mining; but it is quite possible to run into the other extreme. I have examined your Journal, to see whether the late discoveries have been reported, but I find no notice whatever. I consider it to be the duty of an agent to make such reports. That every well-wisher to the mine would desire that it should obtain the ordinary publicity; and, as the value of the shares is entirely influenced by the mining public being in possession of the facts as they occur, I have no hesitation in saying, that the retiring shareholders, be they either voluntary sellers or unfortunate defaulters, are seriously injured by such a withholding of the important facts which have occurred on this mine.

I have, whilst on the ground, that it was the intention of the company to look at the lode, by a level from the shaft, at 40 fathoms. As an experiment it will be interesting in a new country, and with such an extraordinary lode; but the adventurers must not be disappointed if they do not there meet with a course of ore. It appears to me, from the inclination of the branches, as seen in the shaft, that they spring off from the lode at points below the 40 ft. level, especially the largest, and the last now intersected. All these must, however, fall into the lode above the intersection, which would be made by carrying down the shaft to the 40 ft., and there does not appear to be a doubt of a course possible to run into the other extreme. I have examined your Journal, to see whether the late discoveries have been reported, but I find no notice whatever. I consider it to be the duty of an agent to make such reports. That every well-wisher to the mine would desire that it should obtain the ordinary publicity; and, as the value of the shares is entirely influenced by the mining public being in possession of the facts as they occur, I have no hesitation in saying, that the retiring shareholders, be they either voluntary sellers or unfortunate defaulters, are seriously injured by such a withholding of the important facts which have occurred on this mine.

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Truro, June 10.

AN OLD MINER.

GREAT WHEEL MARTHA MINE.

SIR.—I entirely agree with "A Shareholder" of this mine, whose letter appeared last week. My opinion is, that the directors must return the 1s. per share paid upon the preference shares, in equity and justice, without any consideration to the legal question, of which, however, there can be no doubt. When two or more parties enter into an agreement, it requires the consent of the whole to annul it before its due expiration.

Cornhill, June 16.

GREAT WHEEL MARTHA MINE.

SIR.—I am much obliged to your correspondent, in last week's Journal, for calling attention to the conduct of the directors of the Great Wheel Martha. The manner in which they have conducted the affairs of this company is deserving of much censure, and I hope some satisfactory arrangement will soon be made with reference to the mine, and particularly with regard to the holders of preference shares.—W.: Truro, June 14.

CONDURROW.—At a two-monthly meeting of adventurers, held at the mine, on the 13th inst., the accounts were examined and passed, showing—Labour cost for April and May, 715s. 10s. 1d.; merchants' bills, 236s. 2s. 4d.; dues, 41s. 15s. 0d.—993s. 7s. 5d.—By ores sold, 837s. 12s. 6d.; leaving balance due to pursers, 155s. 14s. 11d., which, added to that due at the end of March, 105s. 9s. 8d., shows balance against adventurers of 261s. 4s. 7d.—A report from Capt. N. Vivian was read, which, with other particulars, we shall give in our next Journal.

GRANBLER AND ST. AUBYN.—A meeting of adventurers took place on Tuesday last, when it was determined to discontinue the working of the mines, and to sell the materials. The following accounts for March and April were submitted and allowed.—To balance at last account, 140s. 5s. 8d.; costs and merchants' bills, 676s. 4s.—816s. 9s. 8d.—By ores sold (less dues), 595s. 2s. 2d.; rent for stamps, 5s. 5s.—600s. 7s. 2d.—Balance now due to pursers, 216s. 2s. 6d.

WHEAL ANN, IN WENDRON.—A meeting of parties interested in this mine was held at the Angel Hotel, Helston, on Tuesday last, for the purpose of forming a new company, for working the mine effectually, which was accomplished. The new adventurers, we understand, are to pay 2000l. for the materials, and Mr. R. R. Michell, Marazion, is to be the manager.

WHEAL SETON.—A meeting of adventurers was held at the mine on Tuesday last, when the accounts, of which the following is an abstract, were passed, and a dividend of 15s. per share was declared.—By balance at last account, 846s. 9s. 10d.; ores sold (less dues), 6299s. 7s. 10d.—6145s. 16s. 8d.—To costs and merchants' bills for March and April, 3158s. 9s. 6d.; dividend of 15s. per share, 1485s.—4688s. 9s. 6d.: balance in pursers' hands, 1507s. 7s. 2d.

DEVON AND CORNWALL BANKING COMPANY.—Ten shares in this company, on which 25s. had been paid, were sold on Wednesday last in Plymouth, by Mr. Carne, auctioneer, at 31s. each.—West Briton.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning Eleven o'clock.	
Bank Stock, 9 per Cent., 192½	Belgian, 44 per Cent., —
3 per Cent. Reduced Ann., 83½	Dutch, 2½ per Cent., 42½
3 per Cent. Consols Ann., 84½	Brazilian, 5 per Cent., 66½
2½ per Cent. Ann., 84½	Chilian, 6 per Cent., —
Long Annuities, 8½	Mexican 5 per Cent., 16½
India Stock, 10½ per Cent., 231	Russian, 5 per Cent., 90½
3 per Cent. Consols for Opex., 83½	Spanish, 5 per Cent., 12½
Exchequer Bills, 1000s. 2½d. 40 38 pm.	Orlo 3 per Cent., 23 2½

MINES.—The mining share market is assuming a more cheerful aspect, if we may judge from the many inquiries and offers made for shares in some of our leading mines, although the business actually transacted this week has not been large.

The accounts received from our private correspondents represent a very general improvement in the mines throughout the county, but especially in the western part of Cornwall, which have produced buyers of North Roskeen, North Pool, East Wheel Rose, Seton, &c. Wheel Mary Ann is represented as having considerably improved; and several shares have been done at an advance, and buyers still found.

The reports from East Tamar Mine are of a highly gratifying character, notwithstanding the puerile efforts of the disappointed and prejudiced to misrepresent. For Great Rough Tors a demand has existed during the week, and several transactions have taken place; this, in all probability, arises from evident improvements in the sinking of the engine-shafts, as well as preparations for extending the cross-cut, to see the lode in the 40 ft. level.

The meetings reported in our columns of this week are—the National Brazilian, Jamaica (Welsh), South Wheel Tolgus, St. Austell Consols, Wheel Ann, Wheel Seton, Granbler and St. Aubyn, the Condurrow, and Wheel Margaret. At the Jamaica, dividends to the amount of 5700l. have been divided; and Wheel Margaret has paid 8s. per share (896s.), leaving in hand, 242s. 4s. 3d. At South Wheel Tolgus, a call has been made of 50s. per share; and St. Austell Consols is, for the present, suspended—not having, unfortunately, proved so productive, as all were led to expect; the sett is, however, still thought highly of; and it is intended to give the mine another and a spirited trial.—At Wheel Seton, a dividend of 15s. per share was declared; and the Granbler and St. Aubyn is to be discontinued, and the materials sold.

Transactions in the following shares have been done this week—viz.: South Basset, Wheel Seton, South Wheel Francis, East Wheel Rose, Great Rough Tor Consols, East Tamar, Herodsfoot, Mary Ann, Keswick, West Wheel Treasury, Gwinear Consols, Tregorden, Tamar, Treleane, Cwm Erfin, Devon and Courtney, Trelawny, Trethellan, &c., &c.

In foreign shares there has been some business done in Bolanos, St. John del Rey, United Mexican, Asturian, Australian, &c.

Dispatches were received from the Alten Mines yesterday, and which will be found in another column. They are more than usually full and explicit, and represent the property as being in a highly improved condition, with new and valuable discoveries being continually made. The fortunate turn which took place in the property and affairs of this company must be highly satisfactory to those shareholders who supported it through all its difficulties.

Arrivals of specie to be noticed this week is the *Caledonia*, at Liverpool, on Wednesday, from the United States, having on freight specie to the value of 18,000l. Also, the same day, at Southampton, the *Peninsular* and *Oriental* Steam Navigation Company's ship, *Montrose*, having on freight 20 packages of gold and silver coin—value, 6000l.

RAILWAYS.—On Monday there was considerable improvement and firmness in the funds, which imparted a little more briskness in the share market than marked the close of last week. During the middle of the week things looked exceedingly languid, and very little business was done; the market, however, was decidedly better yesterday, and prices were quoted upwards, with an improving demand.

RULL, THURSDAY.—Old stocks have been more offered during the past week, although prices have not materially receded.—The slight premium at which the new preference shares of the Lancashire and Yorkshire, the East Lancashire, and the Brighton, are marked, forms just sufficient inducement for the holders of old stock to accept them—some to keep for investment, and others to pass them into the market at the current rates.

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgth. Rwy.	Present actual cost.	Price per share.	Last Div.	Traffic Returns.	1848	1847
Birkenhead, Lancashire, & Chesh.	15	997,284	37	5 p. c.	£729	701	
Caledonian	130	3,594,470	31½	—	4023	—	
Chester and Holyhead	59½	2,871,470	21	—	770	—	
Dublin and Drogheda	35	734,529	2½	—	785	897	
Dublin and Kingstown	7½	373,282	6	—	685	854	
Dundee, Perth, & Aberdeen Junction	47	415,073	27½	8	755	349	
East Anglian (Lynn to Ely)	55½	1,062,742	6½	—	605	—	
East Lancashire	96	1,733,915	18	—	1068	779	
Eastern Counties and Norfolk	295	9,833,859	14½	4	15390	11312	
Eastern Union	51½	979,926	20	—	1225	1403	
Edinburgh and Glasgow	53	2,481,767	88	—	3469	3336	
Edinburgh and Northern	29	1,392,092	18	4	1448	—	
Dublin and Great Western	64½	2,087,324	73½	4	2132	2661	
Glasgow, Paisley, & Greenock	23	845,354	15½	4	1210	8165	
Gt. Southern & Western, Ireland	110½	1,809,787	22½	4	2190	1330	
Great Western	281½	10,970,636	89½	7	23265	23392	
Kendal and Windermere	10½	169,888	31	—	188	157	
Lancaster and Carlisle	70	1,395,193	51	4	2013	1284	
Lancashire and Yorkshire	136½	7,597,618	86	7	9664	9877	
London and North Western	429	21,513,354	123	8	43107	39135	
London and Blackwall	1	1,241,061	48	1½	1213	1223	
London, Brighton, & South Coast	161½	6,087,822	31½	4	8503	8415	
London and South-Western	189	6,264,164	48½	8	9854	9199	
Londonderry and Enniskillen	14½	145,135	16	—	126	139	
Manchester, Sheffield, & Lincolnsh.	62	2,336,624	61	5	2535	2249	
Midland and Carlisle	28	440,851	—	—	680	638	
Midland Company	422½	9,852,122	101½	7	20042	20007	
Newcastle and Carlisle (Irish)	3½	735,332	108	—	965	—	
Newcastle and Carlisle	6½	1,407,375	111	6	2225	2250	
North British	81	2,800,748	22½	5	1938	1744	
Shrewsbury and Chester	17	780,272	15½	—	744	382	
South Devon	50½	1,609,071	19½	—	1398	707	
South-Eastern	165½	6,392,181	24½	6½	8398	8716	
Taff Vale	38	820,056	126	5½	1515	1423	
Waterloo and Southampton	36	684,684	82	4½	775	796	
York, Newcastle, & Berwick	12	147,095	7	4	1403	1213	
York, Newcastle, & Berwick	242½	4,466,526	32½	8	12077	8702	
York and North Midland	230½	3,799,297	68	10	8208	6312	

FOREIGN RAILWAYS.

Amiens and Boulogne	75½	573,398	6½	4	1306	1306	
Antwerp to Ghent (monthly)	31	—	—	—	—	—	
Marcelles to Avignon	71½	—	8	—	1376	—	
Dutch Rhine	57½	—	—	—	888	1105	
Northern of France	211	2,000,000	48	4	10974	11410	
Orleans to Bourges (Central)	107½	—	—	—	1775	—	
Orleans to Tours	72	600,000	32½	4	2831	3205	

RAILWAY COMMUNICATION WITH CORNWALL.

It is probable that before our next publication the committee of the Lower House will have decided upon the Taw Vale case. We must they will have the wisdom and courage to disregard the absurd opinion of Capt. Simmons, the official judge of railway works, and will open to Devon and Cornwall the only communication that can be of any service to them. At a first glance this Taw Vale case may appear a mere personal and petty contest between two rival interests for the possession of 44 miles of territory. But it is something very different—it is a case of railway or no railway—of communication or no communication, for a district which, rich in mineral and other undeveloped wealth, must remain poor, unless the only interest which is willing, and which is *interested* in being willing, to make a railway, is permitted to make it. That interest is the South-Western Narrow Gauge Company.

The case stands thus:—There are two roads into Cornwall, one by the sea-coast, and one by a narrow track leading direct to Tavistock. Between the two, Dartmoor rises—an impassable barrier. The coast line is occupied by the South Devon; it accommodates a series of watering-places extremely well, and if it had not been an atmospheric line, and a broad-gauge line, it would have paid extremely well—for the traffic in idle people is enormous. But the cost of cutting broad-gauge tunnels, and making broad-gauge embankments, added to the cost of working the as yet unsuccessful atmospheric system, has rendered the South Devon a rather unprofitable concern. The South Devon, the Bristol and Exeter, and the Great Western, are one interest—the broad-gauge interest. It is another thing for their policy to make another line to Plymouth, or to Cornwall's extremity, to which they have another coast line.

The Taw Vale line runs right across the other opening into Cornwall. That part of Devonshire, lying round Tavistock, is rich in mines. That part of Cornwall where the richest mines lie is the centre—a ridge often called Cornwall's backbone. All the minerals dug out of these two districts are sent into Wales to be smelted. The miners want as soon as possible, in as short a distance as possible, to get their ores down to the water's edge, opposite the coast of Wales. The South Devon and Cornwall lines are on the one side of the island. A line proceeding from the Taw Vale to Tavistock, thence to Plymouth, and on through the centre of Cornwall, would be on the right side of the island. The South-Western, who have twice carried an agricultural line to Exeter successfully to the House of Lords, will, no doubt, suggest this season in giving Devonshire an agricultural and commercial line on the national gauge, in opposition to the luxurious, fashionable, express passenger line on the broad gauge.

The South-Western are willing to work the Taw Vale in connection with the Exeter and Crediton, and to carry from it extensions on the national narrow gauge to Plymouth, and on through the mine district to Tavistock. It is remarked, all the existing mining tramways of Devonshire and Cornwall are on the narrow-gauge.

It is quite contrary to the interest of the broad-gauge party to make a line to compete with their South Devon, for the traffic from Plymouth to Exeter. It would cost 12,000*l.* to convert the embankments, bridges, &c., of the Taw Vale into a broad-gauge line. The Taw Vale has no such money to spare—if they had, it would deprive the shareholders of all profits, or hope of profits. If a broad-gauge line was made, it would be the most unsuitable thing possible—a costly, cumbersome one for the carriage of coal. But the directors of the Great Western, and it would seem to be a working railway—it would be a barricade to prevent the agriculturists, miners, and landowners of South Devon from getting their produce to market by any railway.

Is it not disgraceful that, while laws are passed, and laws repealed, in order to cheapen the price of bread, sugar, coffee, and the freight of these articles, every impediment should be thrown in the way of cheap railways? The cries of philanthropy are no better than cant until some pains are taken to enable the peasant to ride to market with his little produce of garden or farm. What with broad gauge and double gauge, forsooth, railways must soon take their place with token, champagne and truffles.

SAFETY IN RAILWAY TRAVELLING.—We understand, from good authority, that an attempt, of rather an extensive character, is being made, to enforce a reduction of the wages of the engine-drivers employed upon the railways of this country. We deeply regret this, because it is upon the general good conduct and practical knowledge of this most respectable and intelligent class of men, that the safety of the railway traveller, in a great measure, depends. The directors, who seek to save thousand per annum by the reduction of a shilling, or sixpence, per day per driver, will, in the course of a few years, find a very heavy balance against them, consequent upon the damage, and, perhaps—as has often been the case—loss of life, occasioned by the employment of inefficient engineers. We could, were it necessary, direct attention to accidents, involving immense destruction of railway stock and loss of life, caused either by over-worked or incompetent drivers; and we are quite satisfied, from a thorough knowledge of the “cheap” system, as applied to the management of railway traffic, that a reduction of the present, to say the least, very moderate wages paid to the engine-drivers of this country, will be most dangerous to the public, and the very opposite of economical to railway companies. We hope that we shall not have occasion to particularise the painful details from which this, our conviction, is derived.

SCOTTISH MIDLAND AND EDINBURGH AND NORTHERN RAILWAY.—Great exertions are making to have both these lines completed as far as Perth during the present month. On the former the embankments of the bridges, within the last two miles of that town, and on the latter the bridge over the Earn, are the chief works to be finished; and the workmen are engaged night and day in forwarding the operations. Should nothing unforeseen occur, both are expected to be opened early next month.

WATERFORD AND LIMERICK RAILWAY.—On Sunday morning the temporary wooden engine-shed at the Tipperary station, which had only been finished a few days previous, was found to be on fire by one of the policemen on duty, and before any efforts could be made to save it, the structure was entirely consumed. Considerable damage was also done to the works near the station. The outrage is supposed to have been perpetrated by an incendiary, and will not interrupt the usual transit of goods and passengers to and from Limerick and Tipperary by railway.

LEAD ORES.
Sold at Hotelyett.

Mines.	Tons.	Price.	Purchasers.
Maseyryddw	79	£9 3 0	Newton, Keates, & Co.
Ditto	10	9 3 0	Walker, Parker, & Co.
Coetan Llys	10	9 3 0	Newton, Keates, & Co.
Milwyr	84	9 13 6	Newton, Keates, & Co.
ditto	3	9 1 0	ditto
Hendre	80	8 15 0	Ditto; Mather; Walker
Frönfrowng	100	9 7 0	Walker, Parker, & Co.
Deep Level	58	8 17 6	Newton, Keates, & Co.
Llangwynnog	20	8 16 0	Walker, Parker, & Co.
Cadfan	20	9 13 6	Newton, Keates, & Co.
Machynlloeg	30	9 5 6	ditto
ditto	25	8 0 0	ditto
Total tons		473 <i>g</i> .	

Sold at Liskeard.

Mines.	Tons.	Price.	Purchasers.
Herodsfoot	70	£11 0 0	Newton, Keates, & Co.
Trelawny	93	14 4 0	Michell & Sons.
Wheal Mary Ann	61	£17 11 0	B. Somers.
Total tons		227.	

Sold at the Mine.

Mines.	Tons.	Price.	Purchasers.
East Wheal Rose	86	£10 18 6	Newton, Keates, & Co.
ditto	60	10 10 0	ditto
ditto	40	10 5 0	ditto
Total tons		186.	

COPPER ORES
Sampled May 24, and Sold at Swansea, June 15, 1848.

Mines.	Tons.	Prod.	Price.	Mines.	Tons.	Prod.	Price.
Colbre	113	154	£8 17 6	Berchaven	118	91	£5 13 6
ditto	105	154	8 14 0	Cuba	71		

LONDON, JUNE 16, 1848.

Burra Burra	67	55	17	10	14	0	Burra Burra	52	28	28	18	0	6
ditto	65	65	17	11	4	6	ditto	46	28	18	0	0	4
ditto	58	17	11	1	3	0	Montacute	40	22	13	14	0	8
ditto	45	22	13	17	6	6	ditto	36	22	13	14	0	0
Kapunda	45	22	13	17	6	6	ditto	17	19	12	6	0	0
ditto	24	21	13	12	12	0	Gurtavallig	87	53	3	2	0	0

36684.5-6
25654.8
2654.8
950.15
669.13
41.12

12584.5-6

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
English Copper Company.	11	\$4112 6
Freeman and Co.	98	545 0
P. Grenfell and Sons	189	1731 16
Stims, Williams, and Co.	163	1294 0
Vivian and Sons	386	3349 0
Williams, Foster, and Co.	217	1873 13
Minee Royal.	59	759 12
Schneider	239	3357 0

Copper ores for sale June 29.—Cobre 86, ditto 84, ditto 81, ditto 80, ditto 79, ditto 68, ditto 53, ditto 109, ditto 100, ditto 92, ditto 91, ditto 76, ditto 58.—Cuba 129, ditto 117, ditto 98, ditto 73, ditto 71. *Perthshire*

ditto 52, ditto 70, ditto 71.—Berhaven 126, ditto 124, ditto 101, ditto 98.—Knockmahon 70, ditto 75, ditto 70, ditto 61, ditto 52.—Chill 66, ditto 48, ditto 45, ditto 44, ditto 43.—Ballymurtagh 57, ditto 40, ditto 2.—Kapunda 30, ditto 23, ditto 18.—Kamantoo 23.—
 Ballao 3.—Total quantity of ore for sale, 2788 tons.

COPPER ORES.
NO SALE on Thursday last, June 15.
Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Par-
els.—Devon Great Consols, Wheal Josiah, Wheal Maria, Wheal Fanny, and Wheal Anna
Maria 1537—West Caradon 337—Fowey Consols 272—Wheal Friendship 250—Marke

Copper ores for sale on Thursday week, at Farquharson's Hotel, Truro.—Mines and

Creagbraws 219—Tresavean 206—Treleigh Consols 111—Phoenix 39—West Trethellan 7—East Downs 11—Wheal Ruby 11.—Total, 2739 tons.

EXPORTATION OF THE PRECIOUS METALS.—The following are the official returns of the exports of gold and silver from the port of London for the last week:—silver coin to Hamburg, 34,870 ounces; ditto Rotterdam, 63,000; ditto Calais, 1500; ditto Boulogne, 100,000.—Silver bars to Rotterdam, 104,000; ditto Hamburg, 2800.—gold coin to Hamburg, 160; ditto Mauritius, 500; ditto Harlingen, 500; ditto Belgium, 90; ditto Calais, 30; ditto New York, 1300; ditto Rotterdam, 700.

THE EXHIBITION OF THE PORTRAIT OF GEORGE STEPHENSON, Esq., painted by Mr. Lucas, will be CLOSED on the last day of June. His friends and admirers are requested to call and see it, at the Gallery of Messrs. H. Graves and Co., 6 Pall Mall, before it is removed.

NOTICES TO CORRESPONDENTS.

* We should feel obliged to all pursers, captains, or adventurers, to forward particulars of meetings, &c., of the mines with which they may be connected, on the earliest opportunity, that they may be published in the Journal with as little delay as possible.

Messrs. MATHER'S PATENT BORING APPARATUS.—We have received (but too late for this week's Journal) a full description of this boring apparatus, which, in a former Number, we promised to lay before our readers, to enable a judgment to be formed as to its similarity to that patented by Mr. Gard, or otherwise. We shall insert the description in next week's Journal.

The **Mining Journal** is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

Railway and Commercial Gazette.

LONDON, JUNE 17, 1848.

We have not yet experienced the sad consequences, nor the severe loss, which will arise out of the disorganisation and the idleness which has infected some parts, at least, of the operative circles of England. We rejoice that the contamination of this folly has not found its way into the mining districts of the kingdom. In those departments, at least, and in the vast majority, from the Hebrides to the Land's End, her MAJESTY may reckon on a loyal and a devoted population. The great heart of England is sound; there is scarcely a false pulsation, or misoccupied function, in that ever active central organ; the mind of England, also, is engaged in the examination, and in maturing its knowledge, of those subjects which are so intimately interwoven with the domestic and material interests of this great people. It is the daws and grasshoppers who are making this noisy chink, to the annoyance of the nobler and more numerous cattle, who are doing the great works of the national farm, or reposing in the shade which their labours have earned them. But the people of England—we repeat it, the thoughtful people of England—have, from the first, arranged themselves on the side of order and the laws; and there, in all seasons, they will continue; they know how to prize and to appreciate the spirit and the forms of a constitutional monarchy, which keeps rewards and honours for the industrious and the meritorious, no less than punishment and penalties for the disaffected and the seditious.

proposed measure, being canvassed, and which, we doubt not, will, in the end, be productive of much benefit to the mining community. We have sketched out an abstract of the bill, which, having passed the House of Commons, will, we are given to understand, be introduced into the Upper House by Lord GRANVILLE, the Vice-President of the Board of Trade. It is, we feel, hardly necessary that we should say, since our attention has been directed to the subject matter of Mr. WYLD's rider, we have lost no opportunity which presented itself of acquiring information, and placing ourselves in communication with the best authorities, and availing ourselves of the opinions of those learned in the laws or customs, as applied to the Stannaries" or Vice-Warden's Court. We have had interviews with Mr. WHITMARSH, the Registrar of Joint-Stock Companies—with Mr. HARDY, the very zealous and attentive administrator of the af-

fairs of the Duchy of Cornwall—with Mr. WYLD, M.P., at whose suggestion the rider, or clause, was adopted—and with various other parties; while our correspondence with Lord GRANVILLE (with whom an appointment stands for this day), Mr. MILNER GIBSON, Mr. DAMPIER, the VICE-WARDEN, and other gentlemen, who are interested, or connected, with the question at issue, afford conclusive evidence, that we were right in the position we assumed in the first instance; and hence that Mr. WYLD, and the Members for Cornwall, were in the wrong. This, we have no hesitation in declaring our conviction, will be rendered manifest on the introduction of the bill into the Upper House, when, by "one and all," we feel well satisfied, the objectionable clause, introduced by the Member for Bodmin, will be scouted.

As a slight evidence that the matter will not be allowed to pass by unnoticed, we have much satisfaction in rendering a copy of a letter addressed by Mr. GARDINER, from the office of the Duchy of Cornwall, to Mr. JOHN TAYLOR—a gentleman whose position is universally acknowledged as representing the mining interest, and ever being ready with the powers he possesses, whether of mental energy, or connections, of protecting and advancing the interests of the mining community. The following is the letter to which we refer:

Duchy of Cornwall, Somerset House, 3d June, 1845.
MY DEAR SIR,—The communications which I have received upon the subject referred to in your letter of to-day, relative to the clause introduced, on the motion of Mr. WYLD, upon the third reading of the Joint-Stock Companies' Bill, for extending its provisions to mining companies, have been so numerous, and from parties so deeply interested in, and conversant with, mining affairs in the county of Cornwall, that I thought it right to bring the matter under the immediate notice of the Government, without waiting until a meeting of the Council of His Royal Highness the Prince of Wales could assemble. Having seen the President and Vice-President of the Board of Trade, I am enabled to assure you of their readiness to give every consideration to the statements which have been made; and, I believe, they will be desirous that the Bill may be amended in the House of Lords, so as not to interfere with the jurisdiction of the Stannaries, or operate to the prejudice of the mining interests of the county of Cornwall. I am, &c.,
J. R. GARDINER.

This document will, we think, convince Sir C. LEMON, Mr. PEN-DARVES, Mr. E. TURNER, and even Mr. WYLD, that all are not of the same way of thinking, and that a mistake—a "palpable" mistake—has been made by the hon. Member for Bodmin, at the time that he considered he was advancing, or protecting, the interests of the miner and the mine adventurer. It is quite unnecessary for us to offer any remarks on the letter we have referred to, inasmuch that it is to the purpose; and, being in such efficient hands, we cannot doubt the results which will, and necessarily must, arise.

As the Cost-book System of conducting the affairs of mining companies, and the abuses which exist, and are constantly being exposed—arising from styling that the Cost-book System which is opposed to it in its most essential points—are at present causing considerable interest in the public mind, it will by no means be ill-timed to call the attention of our mining readers, in a few brief remarks, to a report, in another column, of a meeting of adventurers in the St. Austell Consols Mine, conducted strictly on the *Cost-book Principle*. This mine was commenced about four years since, under the most promising auspices and favourable indications. After continuous and extensive working without success, the mine is now suspended, and a portion of the adventurers wish to relinquish, to which it will be seen the meeting assented. The great feature of this—certainly no common event—is, however, the position of the company at this moment. Instead of liabilities being suffered to run on and increase, harassing actions by merchants against individuals for payment of stores, and a general breaking up of the concern, and want of confidence engendered, the meetings have been regularly held every two months, bills regularly paid, transfers of shares duly entered, and the entire affairs of the mine really carried on upon the Cost-book System. The consequence of these regular and business-like proceedings is, that, although the mine is for the present suspended, only a small proportion of the shares have been relinquished; and there will, on the valuation of the machinery and materials, be sufficient to pay the relinquishers 7s. or 8s. per share, with a fund in hand sufficient to carry on the works for three months longer. Such is the difference of the results of the Cost-book System, and some which, though falsely so called, are absolutely no system at all. The sett is still considered of great promise in depth; and whatever shares may be given up, many parties are ready to increase their interest. It is intended to give the mine a spirited trial to the extent of 22. per share.

We have, in another article, which appears in our present Number, adverted to the amended Joint-Stock Companies' Dissolution Act—the consideration of which, as associated with mining companies and the Cost-book System, naturally leads us to other points, and more particularly the application of the principle recognised under such title, as affects the working of mines in the United Kingdom. We have no hesitation in saying, that the Cost-book System is solely confined to the county of Cornwall, and that it is ineffective in Wales, in Ireland, or Scotland, or, indeed, in any district, except where the laws affecting mines are carried into effect through the Stannaries Court. If that we are right in the opinion we thus entertain, then the several mining companies, said to be worked on the Cost-book System, whose operations are away from the county of Cornwall, are subject to the operation of the Joint-Stock Companies' Registration Act, where the number of shareholders exceeds 25 (cl. 2); while, under other circumstances, they are as partners, and cannot avail themselves of the protection afforded by the Cost-book System. We are well aware this opinion is not universal, and many blind themselves to the facts—inasmuch that they are fully sensible how much it would militate against their private interests, as necessarily enforcing the application of the Act referred to, and which may be said to be (as it is generally understood) a piece of legislation, of which its sponsors may be well ashamed. It is now many months since we applied to the late registrar under the Joint-Stock Registration Companies' Act, on subject of the meaning to be attached to the 63d clause, recited in our last week's Journal—in reply to which we had that gentleman's opinion in writing, to the effect, that he considered the clause applied to all companies formed for working mines where the Cost-book System was adopted, no matter the locality; and this opinion we believe to be entertained by the authorities at the present moment. Indeed, such is the rule observed, or understood—for, no matter where the mines are located, the Cost-book System is said to be in force, and the mines, consequently, worked upon that principle. Yet were we to ask the projectors, or the adventurers, what is the Cost-book System? how is it composed? what are the rules which apply? we should, doubtless, be told, the system was a very good one, and that, if we referred to the columns of the *Mining Journal*, we should find it defined. That there are certain portions of the system which apply to undertakings of a general nature, and which are not confined to the working of mines, there can be no doubt; and these are alike applicable, whether in Cornwall or in Wales; but we contend that the rules of the Cost-book System, as a whole, are not applied, nor are they capable of being so—for, as we have before observed, we find directors making calls, and, in fact, doing as they deem fit, without consulting the body of adventurers.

This, however, is not all; we look to the security given, not only to the adventurer, but also to the creditor. We would ask, if a mine be worked in Lanarkshire, Carmarthenshire, or in the county of Galway, where is the court of redress for the creditor—by applying to the Stannaries' Court, when such is well known not to exist in the district?—moreover, where the mode of transfer, under the Cost-book System, is unknown, and cannot be recognised, or practised, under the existing laws—where the power to abandon shares, or interest, in a mine, as oft described in our columns, is not understood, or admitted; and when, in fact, all matters connected with the working of the mine must be treated as any ordinary concern of a mercantile nature, or one associated with manufactures. It should be remembered that, under the law, or custom, of the Stannaries' Court, any miner employed, who shall not receive his wages, may apply for, and obtain an order on application to the Court, and on establishing his claim; in case of default of payment, an order is then made out for the disposal

of such portion of the plant, or machinery, as may be found necessary to liquidate his claim and the costs thereon. Can this, we ask, be done in Wales or in Ireland? In Derbyshire, there was a Court which formerly existed—having for its object the protection of the mining interest; but it has fallen into disuse, if it be not even abolished. In Devon, there was also a Stannaries' Court; and, we believe, that such is even now in existence, although the miners of that district do not deem the matter of sufficient importance to direct their attention, or inquiry, to its establishment, or the appointment of the proper officers. If we mistake not—and we believe the authority on which we advance our opinion is undoubted—the Court still exists—as Prince ALBERT possesses equal powers in that county as in Cornwall; but, since the demise of the late VICE-WARDEN, it does not appear that any steps have been taken for resuming the powers of the Court. This we regret; and feel well satisfied, that it is only to direct the attention of the mining interest of Devon to the subject to be the means of re-establishing the Court, where the working miner, the mine adventurer, and the merchant, would have ready redress. We may further observe, that, even the Stannaries' Court has no power over out-adventurers, except so far as applies to acts done under the orders of the court in Cornwall, and the parties being resident within its precincts—and hence it must be self apparent, that the Cost-book System no more applies to the working of mines in the localities named, than it has to do with the Joint-Stock Companies' Registration Act. In thus treating on the subject, we have boldly advanced the opinions we entertain, which may possibly be, to some extent, erroneous; but as the object we alone have in view is to direct the attention of those, who, with the wisdom acquired in the legislative assembly, or more practically acquainted with the operations of the Cost-book System, as adopted and practised in the county of Cornwall, may be enabled to enlighten us, we consider that we shall fully have effected our object, if we elicit the opinions of others; and are, by such means, enabled to arrive at a correct conclusion.

Ere closing our remarks, we cannot but refer to the letter of "An Old Miner," which will be found in another column: it is to the point; and although we do not see how a clause of the kind could possibly be introduced into a bill, which has, for its object, the dissolution of joint-stock companies, yet the argument advanced is well worthy of consideration. On this point we may be allowed to say a few words in this place, rather than append our remarks to the letter in question. Our correspondent, who is evidently an admirer and advocate of the Cost-book System, says, why should this be confined to Cornwall? it is practised in other parts; and, although a question may arise as to the powers having reference to the Stannaries' Courts, or the legality of the course pursued, such having been oft in dispute, but never determined; why not then introduce a Parliamentary enactment, whereby the Cost-book System would be acknowledged, not only as pertaining to the county of Cornwall, but to all mining districts in the United Kingdom? There is much good sense and reason in the suggestion put forward by our correspondent; and we would strongly recommend that Mr. WYLD should introduce a bill to such effect, but with a less number of clauses than that under notice. We do not profess ourselves competent to draw up the preamble of the several clauses of which the bill should be composed; but we cannot help thinking that some half dozen would be ample. In thus advocating the measure proposed by our correspondent, and which, we may say, was entertained by ourselves, we have the first authority for recommending it as a useful and practical measure—the introduction of the Cost-book System in the various mining districts, either by the appointment of local courts, or rendering the affairs of the several mines subject to the laws or rules, as applied to Cornwall, where the Vice-Warden's Court is in force. This might be effected, if not by an Act of Parliament, at least, according to our ideas, by consent of the body of adventurers—the only question being, how far the Legislature would recognise such arrangement.

The question is one of too much importance to determine in one article; and as we raise the question, so as to elicit information from others, we reserve our further remarks until next week.

The following letter has been received from a valued correspondent, and whom we believe to be better acquainted with the subject than those who profess to legislate for others:—

"I know of no authority on the Cost-book System. It arose in Cornwall, and grew out of our local usages, and never, till the Joint-Stock Companies' Act was passed, was it to my knowledge, noticed out of the county publicly. Then, for the first time, was it recognised as a system by legislative authority, and that only incidentally—mines worked on the Cost-book System being parenthetically exempted from the operation of the Act. The effect of the 63d clause exempting mines appears to be to recognise all mines carried on upon the Cost-book System, as well out of Cornwall as within that county; and I think Mr. Crowder and Mr. Butt, of our circuit, both so read the clause. In the important case of Ricketts v. Bennett, reported in the *Law Times* of last June, and in the *Law Journal* of last January, you will find the Cost-book System mentioned as a well known method of conducting mines; and the exception in the Joint-Stock Companies' Registration Act, is referred to in the arguments of counsel, as showing that the system is well known and understood. The system is, however, very little understood, and very imperfectly practised, out of our county."

We need hardly say, that we perfectly concur with the opinions expressed by our correspondent.

In another column will be found a report of the proceedings at a meeting of the shareholders of the NATIONAL BRAZILIAN MINING COMPANY, on which we feel called upon to offer a passing remark, from the peculiar features it presents, doubting not but that measures will be taken, on the part of the directors, to place the matter in dispute fairly before the shareholders and the public. It is at all times to be regretted that dissensions should arise between parties to whom are deputed the management of the affairs of an undertaking, and one which, as in the present instance has been attended with an outlay of nearly a quarter of a million sterling; but we believe it is a general rule, inasmuch that the exceptions are few, that parties who are disappointed are the first to find fault, while there is an old adage which might apply. We have given Mr. W. R. COLLETT's statement; and if he be borne out by facts, it is quite clear that some explanation, on the part of the directors, is due to the shareholders, and that Mr. COLLETT well deserves their thanks, for the labour he has undergone, and the expenses he has incurred in watching over the interests of the shareholders—but we regret the course he has pursued, and the motives by which he is said to be actuated. At the same time that we advert to the course he has pursued, we must also say, that we think the conduct of the directors, Messrs. OXENFORD and Mr. HAMILTON, was ill-advised, and, in our opinion, highly reprehensible, in closing the doors of the office, and, moreover, not being present at the meeting, so as to have afforded explanation on the subject of the charges, or statements, made by their colleagues, and fairly to have met any question which might arise. We think it was their duty, whatever might have been their private feelings, to have been present, and to have entered into the question, of which it is only natural to assume, as was indeed the fact, that the shareholders were in ignorance.

We are given to understand—and we do not hold ourselves responsible for the statements submitted to us, and which we, on the present occasion, adopt—that Mr. W. R. COLLETT (the chairman) proceeded to the mines without the assent of the board of directors. That having visited the mines, and examined the same, taking upon himself to give directions, without any authority from the board, or from the body of shareholders, he returns, visits the office, asks for his expenses—some thousand pounds or so—and withholds all the information he had acquired, leaving to the directors to provide the funds for prosecuting the operations at the mine, while he is upwards of 8000. in arrears. He very modestly asks for his expenses (say 10000.) to be paid, never having been deputed by the company to visit the mines, or to place himself in a position, whereby he should be the major domo. The matter is clearly understood—the chairman being no longer a Member of the Legislature, having failed in his slate quarries of Ireland, and wanting something to do, thinks fit to start over to the mines. He has walked over, or gone possibly by railway, throughout the mining districts of England, Ireland, and Scotland, Belgium, South Africa, the United States, and the antipodes; and being a better miner than a legislator, he proposes, very coolly, to take upon himself the management of the mines, and, if he fails, admit his error. We have no hesitation in saying, that the gentleman, on his own representation, is one whom we should at least require some further evidence than his own opinion, ere we placed in his hands the power he requires. We be-

lieve no second opinion exists; at the same time, that we must be understood not to be the advocates of the present administration, which appears to us to be lax, and requiring alteration.

For our own part—believing that the fuller colonisation of the Australias is a measure upon which the public mind of England is made up, and for the accomplishment of which active and earnest steps will be immediately taken—we have much less solicitude for the result itself than with respect to the class of persons by whom it may be wrought out. It will appear, on a moment's consideration, that the very first want of a colony, great or small, is its food—to supply this elementary necessity of our nature would, therefore, be the first among the first duties of the settlers. For that reason it would be desirable that the emigrants, who form the first waves in the stream of colonisation, should be those who are accustomed to, and have skill in, the agricultural arts—a thousand men from the Lothians, a thousand from Lincolnshire, and a thousand more from Bucks, and the other midland agricultural counties, would form a fine vanguard to go out this year, and fill the beautiful meadows of South Australia with the golden harvests which would recompense their first labours. The vast mineral wealth of the land might, perhaps, next in order, call out a body of hardy and energetic miners from Cornwall and the principality of Wales, by whose patient diligence and skilled activity the wealth lying in her depths, and which combined industry would create upon her surface, would together form the rudimentary structure of a thriving state. This is the commencement; upon these would shortly be ingrafted that larger circle of the arts, and that advantageous sprinkling of the liberal professions, which usually characterise and adorn a people making progress, in any great degree, in ease and civilisation.

By some such deliberative method as this, we may, in a few years at most, fill the solitudes of the Australian continent with the hum of an active and a prosperous population. But, on the other hand, if we are inattentive to the qualifications of those we send out—if we make no appropriate selection on this side, nor prepare for their proper reception and distribution on their arrival at the other, we cannot expect to reap half the advantages with which the treasure itself is pregnant, and which, but for a series of false steps on our part, will undoubtedly be found to spring up, and recompense our persevering efforts.

This week presents more than the ordinary course of mine adventures, whether as applied to the law courts or underground operations, not forgetting those which her MAJESTY'S Government, and the Legislature, have taken under their particular protection—on one and the other we have said a word or two; but we cannot allow the opportunity to pass by without simply noticing some causes of action which, we believe, will be subjected to a jury ere the appearance of our next Journal. It is not for us to offer an opinion as to the merits of the case which may be submitted to a jury, yet we feel, as the supporters of the mining interests, we are bound to express our opinions, and without, in the slightest degree, interfering with the verdict which may be given on the evidence afforded—at least endeavour to show to the one and other what is right and what is not. We allow that we have no right to set ourselves up as censors; but we do at least claim the honesty of intention in discussing any question which may be introduced in the columns of the Journal as affecting the mining interests. There are, it appears, some two or three actions pending, the results of which will appear in our columns of next week—these, we regret to say, reflect discredit on one or both of the parties, while they are calculated to be destructive of the mining interests. Let us just take a cursory review.

There is one case, in which Mr. PAUL RABEY brings an action against a Mr. WHITAKER, for the recovery of 4000. for certain shares sold him in the West United Hills and some other mine—the former being quoted to him at 200. per share; but, according to the *MINING JOURNAL*, at 20s. Whether the purchaser was misled, or innocently introduced by his Cambridge or Oxford friend (for we find the universities have interested themselves in mining adventures), we are not prepared to say; but it appears he purchased shares to the extent—we will not say to the value—of 4000., and an action is now pending for the recovery of the amount. An *IOU* is said to have been given, which the party, against whom the claim is made, declares is a forgery. So much for case the first.

No. 2 gives us an action, brought by Mr. PAUL RABEY against Mr. W. TRENEERY, for libel, and using certain words which were detrimental, and tending to destroy his character. This is one of the strangest events which has come under our notice. There can be no question that the plaintiff practised a course, which, had it been submitted even to one of our sage councillors with civic wisdom, would have had the effect of placing that gentleman in the safe keeping of Mr. COPE, or whoever may preside over her MAJESTY'S gaol of Newgate. However, upon an application to the Court of Westminster, it was decreed that he should pay over the amount which he endeavoured to obtain from the complainant, and the matter was so far settled. Since then, it however appears, that Mr. TRENEERY had expressed himself in a way which, if we are right in our conclusions, we should have been most apt to have done. Mr. RABEY says—"I think you have done me so much injury, that I consider you should pay 20000. damages." Hence the action—it is for us to see what will be the verdict. There are one or two other cases, which may come on or "go off," as the matter may be; but we cannot do otherwise than recommend to our readers, in the locality of Guildhall, to look at the list of cases, and give half an hour.

In adverting to the movements of the day connected with mining enterprise, it may be well that we should offer a passing observation on the measures adopted by the Court of Aldermen, having reference to the "Brokers' Act." A communication has, we understand, been made from Mr. Serjeant MEREWETHER to Mr. TREDINICK, that his presence is desired this day, to meet the LORD MAYOR and Court of Aldermen: then to explain why, and wherefore, he has practised as a broker, not being a citizen of London, or admitted in such capacity. There is more than the one point we think involved in the question at issue, and we purpose being present, to report the proceedings.

NEW PATENTS.

J. Foot, Spital-square, Middlesex, silk manufacturer, for improvements in marking skeins of silk. (Being a communication.)

W. Brindley, Birmingham, manufacturer, for improvements in the manufacture of articles of papier-maché.

R. Want, and G. Vernam, engineers, both of Enfield, Middlesex, for an improved steam-engine, which may be also worked by air and other fluids.

J. Miller, Henrietta-street, Covent-garden, London, gentleman, for a new system of accelerated menial locomotion, even by animal propulsion, for every species of transport machines acting by means of wheels, whether on land or water.

C. H. Capper, Edgbaston, Warwick, gentleman, for a method of preparing and cleaning minerals and other substances.

J. T. Beale, East Greenwich, Kent, C.E., for improvements in the construction and arrangement of engines and machinery for propelling boats or vessels on water, with a means of preventing incrustations in the boilers, part of which improvements are applicable to land purposes.

W. Hunt, Dodder-hill, Worcester, chemist, for improved apparatus to be used in processes connected with the manufacture of certain metals and salts.

Sir H. Hart, Commissioner of Greenwich Hospital, Rear Admiral in our Navy, for improvements in apparatus for preventing what are called smoky chimneys.

W. Chamberlain, Junr., St. Leonard's-on-the-Sea, Sussex, for improvements in apparatus for recording votes at elections.

J. Rose, Darlington, Staffordshire, tube-manufacturer, and W. H. Richardson, the younger, for improvements in the manufacture of tubing.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

J. Sayce, Cornhill, essay morning coat—the Toga.

G. Lander, Cheltenham, dress extending zephyr belt.

A. Hett, Leicester-square, London, water-valve.

R. Garratt, Saxmudham, thrashing machine.

J. R. Remington, Stafford, farmers' and graziers' portable mill.

R. M. Clay, Liverpool, refrigerator.—*Mechanics' Magazine.*

REFRIGERATOR.—Mr. R. M. Clay, of Liverpool, has recently registered a design for a refrigerator, which, externally, has the appearance of a cupboard, or sideboard, and, internally, is arranged in this novel manner:—Within the outside casing is placed another casing of wood, and, between the two, a stratum of charcoal, or other non-conductor of heat, and, next the inner casing, is a casing of glass—the use of glass being one of the great features of the design. The refrigerator, being in form of a cupboard, has doors in front, by means of which the same may be charged with ice, and the wine or water coolers placed therein, it being also arranged that the liquid may be drawn off without opening these doors, whereby the uniform temperature within the refrigerator will remain unaltered for a greater period, and consequently economise the ice.

PROGRESS OF FRENCH MINING INDUSTRY.

(FROM OUR PARIS CORRESPONDENT.)

Not content with the alarm created by the proposed seizure of the railways, the Government has brought in a bill for making fire insurance a Government monopoly—which, of course, means the spoliation and suppression of all the existing insurance companies. After this, it really seems not improbable that this precious Government may make an attempt to fulfil the threat which was made in its name some time ago—viz.: to take all the mines and iron-works into its own hands. But is it probable that a body of 900 reasonable and intelligent men, like the National Assembly, will ever consent to such measures as these?—Let us not believe it. Already has the greatest dissatisfaction been expressed in the Assembly, with respect to the bill on railways; and, judging from present appearances, it really appears more likely to be rejected than passed. But, whatever be the result, there can be no earthly reason why assurances, and still less reason why mines and iron-works, should be seized. To take the latter, especially, would not only be an audacious violation of justice—an infamous robbery of private property—but a most unprofitable bargain to the Government; for how could it be possible for it to take the management of such a multitude of enterprises as mines and iron-works are divided and subdivided into? Besides, it is all very easy for the Government to talk of taking assurance companies and mines, but when is to come the money to recompense the present holders? Is the Minister of Finance, *par hazard*, foolish enough to imagine, that the possessors would give them up for nothing; or even for his trumpety *rentes*, or promises to pay?

The mining interest is now suffering from the crisis. I have rarely, I think, seen so many advertisements of mining concessions to be disposed of as now figure in the newspapers of Paris and the mining districts.

The Vieille Montagne Company has resumed payment. Of all the metallurgical enterprises on the continent I should feel the greatest confidence at present in these zinc establishments of Belgium. Not only have they yielded splendid revenues, but the demand for their products is so great, that they will be always sure of a market, if not in one country, at least in another. They have, it is true, suffered, and are still suffering, from the loss of the French market; but, depend on it, they will soon find another to replace it.

The annual meeting of the Company of the Charbonnages Belges is to be held on the 10th July next, at Mons. A great many of the shares of this important company are held by French capitalists.

The direction of the iron and copper Mines of Mouzaïas, in Africa, is to be held, at Marseilles, on the 1st July. Nothing has been heard of this famous company for some time; and people are very curious to know whether it has been carrying on its operations, and, if so, with what success.

The directors of the Mines of Linarès called a meeting for the 28th inst., but they will not allow any shareholder to attend who is not possessed of 25 shares. Such a high qualification for so small a company is absurd; it leads to a shrewd suspicion that the management has not very good news to tell about the famous vein of silver ore, which, about a year ago, they assured the world was equal to the most valuable and most celebrated of Mexico.

A general assembly of the shareholders of the Iron Works of Besseges, in the department of the Gard, is to be held at Lyons, on the 29th inst. Holders of five shares are entitled to attend and vote. The value of the shares has hitherto been 1000 fr., which is henceforth to be reduced to 500 fr.; and each holder is to receive two of the new shares for one of the old at the meeting.

The Executive Government, with the view of facilitating the importation of those descriptions of iron which figure in the French tariffs, under the designation *traités au bois et au marteau*, has ordered that they shall be admitted in the principal bureaux of Customs, and that Bellegarde shall be one of such bureaux.

The Government has further decreed, that the cast-iron of Styria and Carinthia (Austrian provinces) shall be admitted on the same conditions, and at the same duties, whether in pigs weighing less than 15 kilogrammes, or in pigs not weighing more than that. By a third decree, which appears in the *Moniteur* of this morning, it is enacted, that the cast-iron from the metallurgical establishments of Algeria shall be admitted free of all duty, provided it be brought in French vessels.

Some threatening demonstrations have been made during the last few days by the men employed in the coal pits in the vicinity of St. Etienne. Their principal demand was six days' labour per week; but, on being remonstrated with, they dispersed without committing any excesses. They are incited to disorder by a body calling itself the central committee of the miners of the basin of the Loire. This central committee levies 60¢ on the miners on each fortnight's pay-day, the men paying the money, under the belief that the *soixantier* committee in some way protects their interests. This committee should be looked after. The miners are turbulent enough in all conscience, without being incited by men who profit by keeping alive agitation.

In very many mines of the Loire basin, the extraction of coal is greatly restricted. The Compagnie Generale, which, as you are aware, possesses the greater part of the basin, extracts scarcely any; and, at the same time, it refuses to sell what it does extract at the unreasonably moderate price which purchasers expect. The consequence is, that there are loud complaints against it; but it is absurd to pretend, as some people do, that its proceedings cause the slackening of operations in the iron-works, silk manufactories, glass-works, &c.—that comes entirely from the political crisis.

Greater activity has been displayed of late in the iron-works of the Haute Marne, but from those of other parts of France the accounts, generally speaking, are not so favourable. The Haute Marne has received several orders, which, however, it will not be able to execute off-hand.—Paris, Wednesday.

(FROM ANOTHER CORRESPONDENT.)

Very little alteration has taken place in mining operations during the last week; there appears a general stagnation of business, not only in the mining, but also the great manufacturing districts, on which the former so greatly depends for the supplying of fuel, machinery, &c. Government has announced that it intends to carry out, or, more properly speaking, complete several of the railways which have been now, for some time, at a standstill, from the want of funds to proceed; but, particularly, the enormous price charged by the iron-masters for rails, &c., and non-performance of contracts. The Minister of Public Works has given notice, that he will be ready to enter into contracts for a certain number of *machines*, locomotives, and the requisite quantity of rails for completing the railways in question. There is no specification whether these steam-engines are to be confined to French manufacture only, or extended to foreign—English and Belgian; but the latter is more probable, as the greater portion of the foundries in France have been, for the last few months, nearly closed, from the want of material, either for the constructing of locomotives or carriages, rails, &c. To carry out this grand object, the Government has entered into a loan from the Bank of France for 3,800,000 fr.

The *projet de loi* in the reduction of the tariff duties on the importation of foreign machinery, iron, copper, tin, coils, &c., is expected to be presented in the course of the next week, or, at the latest, the week following—the result of which is looked forward to with the greatest anxiety by the mining interest, as there is a very strong majority in the National Assembly in favour of it, especially all those connected with railway speculations, shipbuilding, manufactures, &c., where machinery and coils are employed.

BELGIUM.—A very great improvement in mining operations has taken place during the last week; and several orders have been given to the factory of Seraing for machinery and rails, not only on the part of the Government, but private railway companies. In the coal districts, however, the working of the pits is continued on a small scale at present; but, as soon as affairs become more established, and confidence restored—of which there is now every prospect—there is no doubt business will again be resumed. In the districts of Liege, Namur, the Luxembourg, &c., the forges are more generally in blast than they have been for the last few months.

FRENCH ADVICE TO ENGLISH WORKMEN.—MIDDLE-MEN, OR CONTRACTORS.—The abolition of under contracting (*Marchandage*, says the *Paris Moniteur des Architectes*), places all workmen on the footing of perfect equality. So far well, and we would that it could be so; but are the workmen in truth equal in skill, equal in intelligence? The measure has necessarily for its result the favouring of inferior workmen; workmen unskilled, indolent, or dissipated; but it will turn upon those very men who have solicited it, and it will consummate their ruin. Now, what does the contractor do? He engages workmen at an abatement, we admit; but he addresses himself to workmen less active, less instructed, short of tools, and who only receive diminished wages, because they do not deserve to receive higher. He supplies the skill which they lack, by his own; he directs them, and they are thus found suitable enough for second-rate work. Under contracting (*Marchandage*) abolished, the master will no longer have an interest in employing inferior workmen. He will apply to the best, to those who are now *Marchandages*, and who, joining usually more power of arrangement, and love of work, to greater skill, will redouble their efforts, in order to bring back their lost profit. The workmen formerly employed under them will be repulsed, and, in place of reduced wages, will have none at all. What we are here relating is matter of history. Things have happened just thus to operative carpenters. They combined to get their wages advanced, they obtained what they asked, and immediately the bad, or middling, workmen were driven from the builders' yards. A similar fate is in store for the workmen of other trades.—*The Builder*.

SOUTH-WESTERN RAILWAY.—Although the scarcity of money put a stop in a great degree, to the works on many railways for some months past, those on the South-Western were continued with a very slight decrease. The branch, from Basingstoke to Overton, Whitechurch, and Andover to Salisbury, has still many men employed, and the works are progressing fast towards completion. A great many fresh hands are to be set on next Monday on the intended extension to Yeovil, through Wilton, Gillingham, Sherbourne, &c. The Farnham branch (9 miles) is nearly completed; the tunnel under St. Catherine's-hill, Guildford (1 mile in length), has nearly all the brickwork finished, and the line is expected to be opened very soon; its extension to Alton (10 miles) is progressing rapidly. The branch to Godalming (4 miles from Guildford) is expected to be ready for traffic in a few months. The expense of forming this branch, it is supposed, will be the cheapest any where on the South-Western line, it being computed that under 10,000¢ per mile will suffice for the same. Mr. Brassy is the contractor.

NEW THEORY OF THE ORIGIN OF EARTHQUAKES.

We have received a communication from Mr. James Drummond, of Comrie, N.B., respecting the shocks of earthquakes that have occurred in the locality of that place, which, as involving a theory very different to generally received geological opinions, and the known effects of electro-galvanism, we proceed to lay a summary of his ideas before our readers. It is true that the cause of these phenomena has never yet been satisfactorily accounted for, either as proceeding from volcanic influences, or direct electrical discharges, and any reasonable suggestions on their origin must prove interesting. It appears that Comrie and its neighbourhood have been subject to shocks of greater or less intensity since 1788; and it has been observed, that in seasons characterised by much thunder, there has always been a paucity of earthquakes, as also when there was much *aurora borealis* and lightning in the night. The year 1839 was remarkably wet, and in which many shocks took place: the year 1847 was also remarkable for *aurora* and lightning, and very few earthquakes. All the great and dangerous earthquakes were preceded by much rain, so that the surface stratum was saturated, and great quantities of atmospheric vapours existed in the lower regions of the air; and, from these facts, and from continued attention to atmospheric and electrical phenomena, before and during the continuance of earthquakes, Mr. Drummond considers that any person may have a positive knowledge when earthquakes will not occur, and a negative one when they will occur; and that is only the case when the wind and weather varies, and shifts about near the magnetic meridian; and that, when the weather is in such a state, and the wind in the north and south points, earthquakes may happen—while, from the eastern and western direction, they are not likely to occur: there may be considerable shocks when the wind is in those quarters, but nothing like a dangerous earthquake. If, however, there be much rain while the wind is in the magnetic meridian, and great quantities of vapours in the lower regions of the air, dangerous earthquakes may occur. He attributes the origin of these earthquakes to the excavation of magnetic trap dykes upon the margin of the River Ledwick in 1787-8, by which the water is enabled to penetrate the dykes, and constitute a galvanic current, although it is difficult to decide on the precise mode. It is most probable that electro-magnetism has to do with the phenomena, the earthquake shock being the immediate effect of magnetic disturbance. He does not think that the weather causes the earthquake, but that the earth's magnetism influences the atmosphere to a very considerable degree. From the fact, that all the houses which have been damaged were situated close to deposits of water, while those on high ground escaped, he infers that the earthquake commotion is mainly, if not wholly, in the aqueous matter of the earth—hence, the sea is often far more agitated by the earthquake than dry land; and if there were no aqueous vapours in the air, nor water below, thunder and earthquakes would never occur. From all these data, he concludes that the seat of the Comrie earthquakes is not in the Dunira hills, as has been stated; but that they originate in the neighbourhood of Comrie; that they are not the effects of fractures in the earth's crust, consequent upon the percolation of water, but are wholly an electrical phenomena; and that they do not originate in the interior of the earth, but in the surface stratum.

PHYSICAL GEOLOGY.—Mr. Drummond has also propounded a system of geology peculiarly his own, which he denominates "Neptunian," in opposition to Plutonian. He does not allow, that the European chain of primary rocks does not owe the irregularities in their outline to elevations and depressions, consequent upon upheaving forces, but to the irregular easterly flow of the primeval waters during the depositary period, and while our planet was covered with a shoreless ocean. That the mountain ridges of the Highlands of Scotland were not upheaved by volcanic force, but deposited in the quieter parts of the ocean. That the valleys and lakes of the Grampians are not the effects of depressions, consequent on the upheaving of the mountains, but the effects of currents, preventing the deposition of so much matter as was deposited in the quiet waves. That what are termed volcanic, or unstratified rocks, were not thrown up through superincumbent rocks in a fluid state, but were deposited simultaneously with them, by a tendency of the water to resist the general flow by pulsations and swellings from tidal influence; thence the unstratified rocks run in lines athwart the mountain ridge, and, in a great measure, parallel, or slanting, to the valley—the currents bending them during their formation. This, it will be perceived, is quite an aqueous theory; and, although it is by no means in accordance with generally received opinions, we have given the spirit of it for the consideration of our readers.

CONTRACTS FOR COALS.—The commissioners of the Royal Hospital, Chelsea, have given notice, that they will be ready on or before the 27th inst., to receive tenders for supplying the said hospital with 700 tons of Wall's End coals, of the best quality.—On Wednesday last, the 14th inst., the finance and home committee of the East India House concluded their contract for the delivery of 1000 tons of (West Hartley, Carr's, Buddle's, Davison's, &c.) coals at Alexandria, in Egypt. Although the contract was a small one, there was strong competition, though, as we have repeatedly stated before, that as regards Government and the Indian contracts, it is the one most in favour at head quarters that carries them, as price and quality is not a sure recommendation to the decision of the officials, who have their favourites.

ROYAL PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY.—We are glad to find that this company has again been the successful candidate for the contract to convey her Majesty's mails, bags, &c., from Southampton to Gibraltar, Malta, and Alexandria, in Egypt, on the 20th of each month (the India Mail). Although the Government has discontinued the mail from Southampton on the 3d of each month, the company still despatches a vessel to the Mediterranean and to Constantinople, &c., on the 27th. Passengers to India, and commercial men, are greatly indebted to the exertions of this company, which has a fine steam fleet at its command.

WHEEL-TIRE BENDING MACHINE.—Mr. Robertson, locomotive superintendent on the Glasgow and Ayr Railway, has perfected a simple and highly-efficient machine for bending railway wheel-tires. It consists of a circular cast-iron frame, securely fastened to a bed of masonry, on the top of which is a revolving plate, 6 ft. 6 in. On this revolving plate is bolted down the blocking plate, removable at pleasure, to suit different sizes of tires. On a level with this is the bending roller, turned on its periphery to fit the exterior surface of the tire, revolving on a vertical shaft, and being made to draw closer to, or further from, the blocking plate by two worm-wheels, acted on by one winch handle. In working, one end of the tire bar is first passed between the bending roller and blocking plate in the usual manner, and the bending roller is then screwed hard up against it by the winch handle. The revolving plate is then put in motion until the two ends of the tire meet, when the bending roller is screwed back, and the tire lifted off the plate. By the present method, it takes 10 men one day to bend 20 tires, while the machine will accomplish the same task in half an hour.

IMPROVEMENTS IN RAILWAY TIRES FOR WHEELS.—Mr. Evans, of the Haigh Foundry, near Wigan, has introduced a novel mode of fixing on tires to railway wheels—the junction being effected by a fusible metal joint. A dovetailed groove is formed along the inner surface of the tire, and a dovetailed projection on the spokes. The dovetailed groove in the tire is made wider at its narrowest part than the dovetailed projections in the spokes at their widest parts; the tire is shrunk on in such manner, that the bottom of the groove may come into close contact with the ends of the spokes. Although the tire has shrunk over the dovetailed ends of the spokes, it is evident there will be a space left on the sides; and, in order to make a perfect joint, this space is filled with melted metal, as zinc, that being the hardest and cheapest of the easily-melted metals. This will hold all secure together, and the zinc can be, at any time, easily melted and removed for repairs.

ON THE SOLUBILITY OF THE OXIDES OF IRON, COPPER, AND COBALT, IN CAUSTIC POTASH.—In making use of the apparatus invented by M. Liebig, for the determination of carbonic acid, M. Volker found that the solution of caustic potash employed, which at first was quite clear, contained, after the passage through it of carbonic acid, a brown flocculent precipitate of oxide of iron. Some direct experiments, made with a concentrated solution of caustic potash and oxide of iron, recently precipitated, confirmed the nature of this substance; consequently, M. Volker recommends, for the separation of alumina and oxide of iron, a solution of caustic potash, and moderately concentrated (if the solution be too diluted, the alumina will be but partially dissolved). The oxides of copper and of cobalt dissolve in large quantities in caustic potash, so much so that we can even employ the solution of this first-named oxide to determine small quantities of grape sugar mixed with cane sugar, which reduces the deutoxide of copper to the state of protoxide. In order to assure himself of the correctness of the statement of M. Berzelius, that the solubility of oxide of copper in caustic potash was due only to the presence of organic matters, M. Volker acted with the greatest possible precaution; he states, however, he found his experiments fully confirmed. The solution of the oxide of copper in caustic potash may be diluted with water, without a separation of the oxide of copper. When it is evaporated to dryness, a deep blue mass is attained, which dissolves in water, communicating to the liquid a beautiful green colour. When a current of chlorine is passed through a solution of oxide of copper, in caustic potash, the liquid assumes a deep green; but the moment that the alkali is completely saturated with chlorine, the combination which was formed is decomposed, the oxide of copper is precipitated, and chlorine disengaged.—*Trans. Berlin Academy of Sciences*.

Original Correspondence.

THEORY OF ELECTRO-MAGNETIC ACTION, OR POLAR FORCES, AS APPLIED TO MINING AND GEOLOGICAL PHENOMENA.

SIR.—If my memory does not deceive me, I think that this truly useful theory was first noticed and commented upon in your valuable Journal upwards of six years ago, at which time even it was stated that it had been most usefully applied, for years previous, to underground works. In 1843, it will be remembered, that Mr. Hopkins, the author of the above, inspected our mines, with the object of ascertaining how far his views were applicable to the Cornish mines. The result of his investigations fully corroborated his ideas at the Tamar, Callington, Carn Brea, North Roskear, and a number of other mines, as is well known to the respective captains—to many of whom he was enabled, by looking at the plans alone, to state where the rich and the poor parts were situated, the shape and direction of the bunches, the nature and the probable amount of the heaves, and a number of other useful questions, connected with mining.

I remember him saying, when he was at Redruth, that "Wheal Seton would make a good mine to the westward, and that there were still in this, as well as in other districts in Cornwall and Devon, a great amount of undiscovered deposits of ore, which, by the proper and careful application of this theory, may be discovered." Some of his predictions have been already fully verified; and I have no doubt much more will be found out. Mr. Hopkins published an outline of his theory, on the *Connection of Geology with Terrestrial Magnetism*, showing its general applicability to all phenomena, connected with terrestrial physics. This work was also commented upon in your Journal, and met the approval of a great number of your mining correspondents. The only objection I made was, that the chapters on mining were too limited to suit the generality of our mine captains; had he communicated all that he must know himself on that subject, and what he sometimes explained verbally to us in the mines, he would have made his work much more valuable to miners.

Our hon. Member, and worthy President of the Royal Geological Society of Cornwall, in his address, the same year, after commenting on this work in favourable terms, pressed on Mr. Fox and others to test the accuracy of Mr. Hopkins's observations and conclusions, and pointedly drew attention to the following propositions contained in the said work:—1. "That the cleavage planes are not mere local phenomena, but a universal structure—a polar grain—formed uniformly, more or less vertically, from pole to pole, caused by a subterranean molecular action, or the circulation of polar currents, from south to north.—2. That the crystallisation, and meridional structure of the primary rocks, from aqueous solutions of the elementary substances, have been, and continue to be, formed by the constant action of the polar currents from south to north; that the rocks are more or less saturated with mineral salts, in a state favourable to chemical action, and having a free motion through the pores and cleavage of the rocks, in obedience to the polar force; that the gneiss and schist (instead of their being, what is generally supposed, sedimentary beds) are the modification of the granitic base, produced by the polar molecular action on the quartz, felspar, mica, &c. &c. &c. This meridional action necessarily causes a considerable tensional strain; and, should any parts of the mass not possess sufficient tenacity to allow them to elongate, fractures would ensue—and those would take place more or less transversely to the direction of the polar force; the nature and number of the ruptures would depend on the variable state of the mass, &c.—3. The order of the splits and transverse fractures in the crystalline crust of the earth is produced by polar tension, and the progressive opening and filling of such ruptures by the crystallisation of the moving solvents in the rocks; they vary in quality and quantity, according to the nature of the rocks intersected and local chemical attraction," &c. &c.—See chapter v., vi., vii., and viii., and plates 4, 6, 7, and 8.

The distinction between east and west and north and south veins, and the influence of the impermeable splits on their contents, &c., was also brought forward. Mr. P. N. Johnson, who has had much practical experience in these matters, very soon responded, and made the following communication:—"He had lost no opportunity in endeavouring to establish, by observations and experiments, the effect of various rocks and formations acting as positive and negative poles, for the deposit of metalliferous substances; and that the existence of such deposits depends not only on the difference of rock, but that the action must be kept up by the moisture percolating through the cleavage of the rock in which they are found. In his experience he had never found a bunch of ore without proving the existing cause to be the percolation of moisture in the cleavage of the rock, and difference of character in the contiguous formation," &c.—all in perfect accordance with Mr. Hopkins's observations. I have also correspondence with miners in Chili, Brazil, Mexico, and Australia, who one and all agree that the same rules hold good in all the mines.

To show further that this polar theory is not only generally known, and duly appreciated, I shall quote the following from a very popular periodical. After noting its utility in the explorations of mineral veins, &c., the writer proceeds to state—"The great ocean currents are from south to north, which, with the upheaval and subsidence of continents and islands, the changes of level continually going on, may be referred to the action of polar currents passing from south to north. Everywhere, in fact, there appears to be a tendency towards the north pole, or pole of decomposition (as Mr. Hopkins calls it), from whence the decomposed substances are carried back to the south, to take on new combinations, and resume their part in perpetuating the operations of Nature. And it is worthy of notice that, while in the north we find fossils, and other remains of the torrid zone and southern regions, we never find, in the south, any fossils but those belonging to the south. Besides, all the sedimentary beds in the southern hemisphere are comparatively new; whereas those in the north are very ancient. This crystalline film of our globe, constantly moving from south to north, by the polar currents, would naturally carry the ferns of the south, the sponges and corals of the tropical zone, and the animals entombed in the different parallels, to the north; modified by the changes of temperature through which it passed, during its extremely slow action; and by alternately elevating and submerging from the level of the sea, during the great ages of transit, would naturally provide an endless succession of coal-beds and other sedimentary formations, filled with tropical relics, for the inhabitants of the chilly north. In our coal-beds, both in Europe and North America, and even in Melville Island, we find fossil plants, which must have had tropical heat and light for their growth and organic productions, indicating a temperature similar to what we still find in the southern hemisphere. Hence the wasting away and degradation of the land, which have often been viewed with alarm, are now shown to be compensated for by a natural process, going on under our eyes, tending to the renewal and perpetuation of the physical universe."

In reading your interesting Journal of the 18th March last, I was surprised to observe, in a lecture, "On Mineral Veins," Professor Ansted, announcing to his audience a new theory of his own—polar-force theory—which, if I comprehend it rightly, appears to be an imperfect idea of the above. Surely, the learned professor must have either been "a nodding" for the last four or five years, or he has been so enveloped with the smoke of the igneous doctrine, as not to be able to see before what was known, and what is going on—not merely in foreign countries, but in his own. He has partly disarmed miners' criticisms—inasmuch as he candidly confesses, in the same paper, "that these lectures are delivered to a class of college students, and are, therefore, less practical than might seem desirable by those who are themselves engaged in mining. However, I think a professor of geology, applied to mining, should make himself more acquainted with what is known, in his own country at least, and not be so many years behind in our science of mining. This science is pre-eminently one of observation and experiment, and cannot be acquired in the study. One good observation, made underground, is worth a cart-load of assumptions. A mathematician may as well attempt to make himself an engineer, and try to discover all the physical properties of matter, solely by reasoning on the nature of lines, angles, and circles, as a professor of geology to attempt to introduce laws to guide miners, without having practical knowledge of the subject. This eloquent lecturer, after showing the inconsistency of the Werner theory, and the imperfection of the igneous, (which, it appears, he has only lately found out), alludes to Mr. Fox's theory, and says, "this was a good theory in its way," but would not do. "It was evident," continued he, "that to be true, the theory of veins must be universal in its application; and as none of the theories hitherto propounded are applicable, and as there had been no attempt, that he was aware of, to form them into one theory, which should account for all the phenomena, he would give a general idea of his own views on the subject, which were derived from a consideration of the nature of polar forces."

These forces were probably only one force, and all, it must be understood, produced molecular change. He, however, admits, that there were several well-known facts, which had been made out and proved both by the chemist and physicist—he meant those which related to the action of terrestrial magnetism.—[A vague acknowledgment of the labours of practical men.]—This subtle current, traversing the earth's crust in this manner, affected every material of which that crust was made up. It was also easy to imagine, that the crevices having been produced, certainly in relation to the physical structure of the earth, and having a north and south direction, should be cut across by transverse fissures. No person, who has ever seen mineral veins, could, for a moment, doubt that molecular change had gone on with regard to them." In continuation, he says—"The theory of polar forces, then, must be referred to in any attempt to explain these phenomena; and he believed that it would ultimately be found to account for all the circumstances, and serve to correct the other theories; that the fissures thus formed have been, like the rest of the earth's surface, subject to the action of magnetic currents; and that they have become receptacles, in which particles assume a crystalline form in their natural order. These were the views he held with regard to the filling of mineral veins, &c.; and, although the theory might not be so nearly perfect as could be wished, it might still form a foundation upon which a more elaborate and consistent structure might be raised."

This, Sir, is like taking out a few leaves from Hopkins's work, *On the Connection of Geology and Terrestrial Magnetism*, and the words reconstructed again by an unpractical hand. Your reflecting readers must think it strange, that a professor of mining in the University of Cambridge should be so ignorant of what is really going on in our own mines, and to be so much in the rear of the ordinary knowledge of our miners. Whatever he may think of our scientific knowledge in Cornwall, I think a little training amongst us would make him much better acquainted with the science of mining than he appears to be from his public lectures. We should be happy to give him a few useful hints on the nature of lodes, and the character of the country, to enable him to give a more clear description of the general properties of mineral deposits, bunches, or "pockets," as he calls them, to the London student.

Penzance, June 10.

CASE-STEEL.

Sir,—Your correspondent, Mr. Martin, has suggested the use of red-hot moulds for giving a degree of sharpness and finish to articles cast therein from steel of fusion. As the nature of cast-steel is little understood, and its manufacture confined to a few localities, a few remarks, relating to the properties and habitudes of this most valuable form of the Protean metal—iron—may prove interesting to Mr. Martin and to others of your many intelligent readers. When bars of iron which have, by the process of cementation, become converted into what is called blistered steel, they are, when highly carbonated, extremely brittle, and their internal structure has been altered from a fine granular or fibrous texture, to a large crystalline grain, more or less brilliant and homogeneous, in proportion to the purity and soundness of the original bar-iron. The homogeneity is, however, never perfect; and, in all cases, there are portions, or particles, of each converted bar, which have not imbibed any, or a sufficient proportion of, carbon to constitute steel—so that the bar is, at best, a mixture of true steel and malleable iron. To produce cast-steel, these cemented bars are broken down, and placed in crucibles of the best fire-clay, in which they are exposed to the intense heat of an air-furnace, until fusion has taken place. When the fusion is supposed to be complete, the steel is poured into cast-iron moulds, heated, but not red-hot. As long as any pieces of steel remain unmelted, a hissing, frying sound may be heard, on removing the cover of the crucible; and the surface of the fused portion of the metal is observed to be agitated by the incessant escape of a gas of great expansive power. When the steel is all fused, the hissing ceases; and the surface of the metal appears like a bright convex mirror, and free from agitation. It does not, however, follow that the metal is fit for pouring; for though the steepest portion of the charge is now perfectly fluid, and in a state of extreme division, yet the portion of the charge, consisting of the uncarbonated iron—or, in other words, the malleable iron—requiring for its fusion a heat far exceeding the temperature required for reducing the steel, remains still suspended near the surface of the metal, in a pasty or semi-fluid condition, until either it has imbibed a sufficiency of carbon from the circumstant steel, or till the temperature shall have been raised sufficiently to effect its fusion. When this has taken place, and the metal is poured, the ingot will be as perfectly sound as any ordinary casting, but slightly porous at its centre, from the shrinkage of the fluid, which, of course, sets first at the outside of the ingot, in contact with the comparatively cold iron of the mould. If any particles of unfused, or imperfectly fused, iron, remain in the steel, when poured, the ingot will be found full of little cells, or cavities, numerous and large, in proportion to the quantity of unfused iron present; and as iron of the best quality is the most infusible, it follows that the steel prepared from it is more liable to be blown—i.e., full of cells, or cavities—than cast-steel from an inferior kind of iron. In all cases, with a sufficient heat, a perfect degree of sharpness and solidity may be given to castings from fused steel; but the intense temperature required to effect this with fine cast-steel, renders it a matter of experiment more than of practical utility. For the common uses for which cast-steel is manufactured, the fusion is sufficient to adapt the ingot for tilting into bars, but insufficient to produce a fine and perfect casting. In the common refinery, or running out fire, an analogous phenomenon is observable. A portion of the charge is malleabilised during the operation to a certain extent; and, floating to the surface of the denser and more carbonised metal, it forms the cellular face, so strongly developed in very high-blown fine metal. In the blast-furnace, where portions of the materials always arrive at the zone of fusion in the state of malleable iron, this iron mingles with the more carbonated pig-iron; and, when present in excess, it floats to the surface of each pig of iron, occasioning honeycombs, of a depth proportioned to the amount of malleable alloy contained in the pig-iron. When cast-steel is prepared direct from the ore, the cellular structure is never developed, because the fusion is always homogeneous, and there can be no particles of malleable iron present to disturb the consolidation of the fluid steel. When a piece of blistered steel is first fused, or liquified, in a small clay crucible, and then allowed to cool down, the surface of the cold metal will be found finely radiated, like a fan, with delicate ridges of steel—whilst the lower side of the ingot will be found full of deep hollows, scalloped out like shells, and covered with a net-work of arborescent crystallisation. When a much higher temperature is applied, and the fusion has become more perfect, and the division of the metallic particles more complete, the ingot will be found, when cooled down in the crucible, smooth upon its surface and sides, and exhibiting merely the linear edges of its crystalline structure.

From this it is clear that, without a full fusion, the steel will not fill up even a heated mould with solidity; and, when perfectly fused and rendered liquid, it will, as far as I have seen, fill a mould with perfect solidity, even if the mould be only lukewarm. Of course, where fusion has barely taken place, and there is no great excess of spare temperature above the point of that fusion, the metal sets so speedily as to render it impossible to execute any fine castings with it; and I may observe that, unless cast-iron be heated very much beyond its melting point, it will not, more than cast-steel, exhibit any degree of sharpness in the mould.

If cast-steel be poured into a shallow mould of cast-iron, and the jet of metal be made to fall continuously in one place, it will be found that the steel has penetrated the iron at that place, and a junction is formed, exhibiting the steel passing through every intermediate state into the cast-iron of the mould. When the mould is deep, the bottom is protected from the jet of steel by the depth of the fluid mass—so that the moulds are uninjured; but, on the supposition, that the moulds should be made previously red-hot, I am of opinion that the steel would penetrate and unite with the iron of the moulds. This, however, would not prevent the adoption of red-hot moulds of a more infusible substance than cast-iron; but I do not think that the heating of the mould would at all influence the stability of the ingot.

Pig-iron is an alloy of malleable iron, white cast-iron, steel, and grey cast-iron—for it is produced on the large scale by the simultaneous fusion of a multitude of pieces of ironstone, whose metallic contents are existing in all those various states when they arrive at the zone of fusion above the blast; and of all the pig-irons of commerce, that which contains the greatest proportion of grey cast-iron, will be the best suited for fine castings; but it will be also the weakest—whilst deeply honeycombed iron, containing a large alloy of malleable and steel iron, will prove suitable only for large castings, and where great strength is required.

The Scotch iron is a strong instance of the correctness of these views; for the ironstone is rich, homogeneous, and easily carbonated; the furnaces are capacious and lofty; and the hot-blast stoves are very effective and

powerful—hence, the materials are nearly all carbonated before fusion, and a weak, but fluid, cast-iron, is produced free, or almost free, from malleable alloy.—ROBERT MUSHET: *Coleford, June 12.*

LONDONDERRY MINING COMPANY.

Sir,—It is evident, that the flattering prospects of this company are beginning to excite the envy, and raise up the opposition, of parties who are directly interested in frustrating and defeating, if possible, the formation and final success of this most lucrative undertaking. In England, it may be estimated, that on an average of 20 years, the amount expended in the production of iron is at least from 80 to 85 per cent. of the value of that commodity—thus leaving only from 15 to 20 per cent. to cover the interest of money expended in the erection of the works, &c., and to constitute the net profits of the iron trade, taken collectively. I will now show, in contrast, the cost of production for pig-iron at the Nova Scotia Mines, which may, I think, be realised under good management.

I will suppose that suitable blast-furnaces, to ensure a weekly make of 300 tons of pig-iron, can be erected at a cost of 12,000l.—an estimate of the most liberal kind, when the purity and richness of the ore is taken into consideration. This would give an annual make of about 16,000 tons, and the interest upon the capital expended would, at 5 per cent., amount to 600l. a year. To produce this quantity of iron, 27,000 tons of ore, averaging about 60 per cent., would be required; and as the ore is such, that it can be easily wrought, and is so situated, that it can be wrought open work, I am justified in assuming, that a common labourer could raise 4 tons per diem, at a charge of, perhaps, 1s. 3d. per ton, including the cost of tools, powder, &c. The cost of haulage to the furnaces would be a mere trifle, as the furnaces would be near the mines, and connected by a short branch of common mineral railway—so that, if to the cost of raising the ore we add 9d. per ton, for filling, haulage, and unloading, we shall have 2s. as the full cost of 1 ton of ore, delivered into the furnace yard. The ore needs no calcination, or other preparation, for the blast-furnace. There would be required also a due proportion of limestone and clay-shale, as fluxes for the ore—the former costing about 4s. per ton, including breaking, and the latter 2s. 6d. per ton, delivered at the furnaces. The cost of the charcoal has been estimated at 20s. per ton; but, in my opinion, where the charcoal is prepared from large timber, 15s. per ton is a liberal estimate; I will, however, assume it at 20s. To produce 1 ton of pig-iron, would require of charcoal 25 cwt., for smelting, and for engine fires, &c. Labour may be fairly taken at 7s. per ton of pig-iron; wear and tear, 2s. per ton; salaries, 2s. 6d. per ton, for (say) a manager at 800l.; two assistant managers, at 200l.; an accountant, or head bookkeeper, at 300l.; and two clerks, at 100l. each per annum; and some subordinate salaries, amounting, with the preceding, to an annual expenditure of about 2000l. To these various items we may add 5s. per ton for omissions; and the cost of producing at the works 16,000 tons of pig-iron will be as follows:—

Iron ore, 27,000 tons, at 2s.	£2700 0 0
Limestone, 14,000 tons, at 4s.	2800 0 0
Clay shale, 12,000 tons, at 2s. 6d.	1500 0 0
Charcoal, 30,000 tons, at 20s.	20000 0 0
Labour on 16,000 tons, at 7s. per ton	5600 0 0
Wear and tear on ditto, at 2s. per ditto	1600 0 0
Salaries on ditto, at 2s. 6d. per ditto	2000 0 0
Omissions, 5s. per ton, on 16,000 tons	4000 0 0
Interest on expenditure, 12,000l. at 5 per cent.	600 0 0
Total	£40,800 0 0

This gives a cost of production amounting to 2l. 11s. per ton of pig-iron at the works. Now, estimating the duty in the United States, the freight, commission, and loading and unloading, with wharfage, &c., at 29s. per ton, the prime cost of 1 ton of charcoal pig-iron, delivered in New York, will be only 4l.; and as the selling price of charcoal pig at that port is even now upwards of 7l. per ton, a clear net profit of 3l. per ton would accrue to the Londonderry Company, for each ton of their iron delivered and sold in New York, or 48,000l. of net profit upon their whole make of pig-iron—so that, out of the gross proceeds of the sale of the pig-iron, 43 per cent. of profit would revert to the company, or from 23 to 28 per cent. more than the average per centage of profit returned from similar investments in Great Britain. As respects steel-making, the prospects of the Londonderry Mining Company are equally promising, and the following estimate will show the cost of producing 1 ton of cast-steel, in bars 8 ft. in length by 1 in. square, from the Nova Scotia ore, if brought to this country:—

Two tons ore, at 60s. per ton, including raising, shipping, freight to England, &c.	£26 0 0
Preparation of ore, at 30s. per ton, and labour	3 0 0
Cast-steel pots, per ton	1 15 0
Coke, 4 tons, at 14s.	2 16 0
Repairs of furnaces, waste, &c.	2 8 0
Drawing down to inch square	4 0 0
Waste in drawing	0 12 0
Total	£30 11 0

As this steel would be of the very finest quality, I am warranted in assuming, that it would sell readily, at a price which would realise 20l. net profit per ton of bars. Without any establishment in Nova Scotia beyond that required to raise and ship the ore for England, a capital of 15,000l. would enable the company to manufacture 50 tons of cast-steel per week in England from their ores, or 2500 tons per annum, the sale of which would return them a net revenue exceeding 50,000l. per annum. With prospects like these open before them, I am not surprised that monopolists, whose interests are at stake, should feel inclined to oppose the carrying out of the views entertained by the projector of the Londonderry Mining Company; but it argues a weak cause, when these monopolists enlist into their service such paltry and malicious scribblers as my late antagonist of the 27th of May.—ROBERT MUSHET: *June 12.*

THE GENERAL MINING ASSOCIATION, AND THE NOVA SCOTIA MINING COMPANY.

Sir,—A report has gained circulation in the metropolis, that the General Mining Association of this city has obtained a grant from the Crown of all the mines and minerals of Nova Scotia; and the natural inference is, that the Nova Scotia Mining Company, lately incorporated by the Legislature of that colony to work certain mines in the county of Colchester, of that province, and with which I am connected, must necessarily encroach upon the legal rights of the General Mining Association. If the impression thus made were permitted to go abroad without contradiction and correction, the interests of the Nova Scotia Mining Company would, no doubt, suffer, which perhaps was the intention of those to whom it owes its origin. Permit me, therefore, through the medium of your columns, to give the following brief statement of facts. The mines owned by the Nova Scotia Mining Company have been granted by the Crown, along with the soil, in the year 1765, as was the practice in the early settlement of this colony. Subsequently, the Crown thought proper to change the tenor upon which grants were made, by reserving the mines and minerals, and giving a title only to the soil.

In the year 1826, the Crown granted, or leased, to the late Duke of York, for the term of 60 years, all the mines and minerals then vested in the Crown in Nova Scotia. The lease thus made to the late Duke of York is now vested in the General Mining Association; who are now, by virtue of that lease, and a Royal Charter, granted to that body in 1846, working the coal-fields of Pictou and Cape Breton extensively, and, I believe, profitably. It is evident, therefore, that the lease made by the Crown in 1826 to his late Royal Highness, or the Royal Charter given in 1846 to the General Mining Association, could not, nor did not, interfere with the grant made in 1765. Indeed, these facts are so well known in the colony—and, I presume, by the directors of the General Mining Association—that the agent of that company, as already published in your paper, as quoted from the *Halifax Times*, stated, at a public meeting in Halifax, "that if these valuable deposits of minerals had been reserved by the Crown, and conveyed to the General Mining Association, they would have an establishment at Londonderry by this time worth 100,000l."

These facts are so conclusive, that they require no further comment to convince anybody beyond the influence of that "considerable circle," of which your correspondent, Mr. George Phillips, is the "centre," that there can be no conflict, as regards titles, between the Nova Scotia Mining Company and the General Mining Association; but, Mr. Editor, there are other matters that have engaged the attention of the "circle," whose centre is in Old Broad-street. Wages are so high in Nova Scotia, that a mine, however rich, cannot pay, is another objection whispered into the ears of "intended shareholders." I am not over anxious to appear before an English audience as a lecturer upon political economy, yet I cannot shrink from a duty I owe to the Nova Scotia Mining Company, as well as the colony, to state, that while the item of labour constitutes, as I am informed, 85 per cent. of the price of production of English iron, that in Nova Scotia it will not amount to 50 per cent.; and that iron can be produced in the

latter place at a less cost than in England; while the article will be worth double the value, and for the following reasons:—The vein of specular ore upon which the Nova Scotia Mining Company intend very shortly to operate, is upwards of 160 ft. thick; while it crops out in the face of a hill, that will admit of horses and carts being driven into the level, which level will drain the mine without the use of machinery. The ore will be thus obtained by quarrying, and one man's labour will produce as great a result as half-a-dozen will in the thin strata generally worked in England. The ore, as taken out of the mine, will yield 70 per cent. of pure malleable iron; whilst those of England rarely exceed 40 per cent., after undergoing the laborious and, consequently, expensive process of roasting.

The cost of transportation of the raw materials is no inconsiderable item in the cost of production of iron, principally performed by animal labour. In Nova Scotia, the price of hay, in the locality where the mine is, seldom exceeds 30s. per ton; oats, 1s. 3d. per bush.; and excellent draught horses can be bought from 16l. to 20l. The distance from a good shipping port is only seven miles, and the cities of St. John, Portland, Boston, New York, and Philadelphia, are all within 10 days' sail—thus affording every facility to reach a ready market. If these statements be correct—and I defy successful contradiction—I think Mr. Mushet is justified in stating, as he has done in your Journal of the 6th of May, "that the Londonderry mines offer to capitalists a safe and lucrative investment; nor has any undertaking of superior merits, at any time, been laid before the public, through the instrumentality of your columns;" and let me remark, in conclusion, that the attempt made by Mr. Phillips, and his circle of "intended shareholders" in Old Broad-street, to inflict upon the colony of Nova Scotia, and this country, the twofold injury of retarding the prosperity of the former, and depriving the manufacturing interests of England of the advantages that would accrue from having a supply of good steel from one of its colonies, and thereby supersede the dependence and imposition under which it now labours from foreign countries, must meet merited condemnation from every well-regulated mind.

Aldersgate-street, June 15.

NOVA SCOTIA IRON ORE—MANUFACTURE OF STEEL.

Sir,—In the *Mining Journal* of the 20th of May is a letter addressed to the Earl Grey from Mr. John Ross, containing statements by no means correct. Mr. Ross designates his property as "a mine of iron ore of unusual purity," and states that it "will produce steel equal to the best quality, which no other mine in her Majesty's dominions can." Now, as regards the mine itself, and the purity of the ore, little need be said beyond the assertion, that similar specimens can be picked from many extensive sources in this the mother country, and of equal purity; then why, I ask, drain her of capital to work a distant mine? I have been experimenting on several ores, including some from the Bay of Fundy; and my researches attest the fact that, by my modes of treatment, we have at least two inexhaustible sources of hæmatite in this country, of the same denomination, but more workable than this so-called specular iron ore of Nova Scotia. I obtained half a ton of the ore of Sir Thomas Lethbridge, of Sandhill Park, and am now prepared to state which out of seven different ores will make the best iron and steel at one operation. I, however, advise the Londonderry Iron Company not to permit its progress to be marked by, or based upon, the inventions of others unjustly obtained; let them examine well the allegations, and it will be clearly perceived that I am the inventor of a process for making steel from every description of iron ore, by first intention—without puddling, rolling blooms into bars, cementation, and subsequent fusion in steel melting furnaces.

I am perfectly indifferent as to the success or otherwise of the Nova Scotia Company; but I cannot help thinking that our home resources ought to attract British superfluous capital, more especially when we possess as good ore in great plenty, and now lying useless. If the honourable Mr. Cunard thinks so well of the scheme, why does he not take an interest in the company proportionate to his opinion expressed in his letter quoted by Mr. Ross?—W. RADLEY, Ch.E.: *Cullum-street, City, June 13.*

THE COPPER MINERS' COMPANY.

Sir,—Reference has been lately made to the stoppage of the works of the Governor and Company of Copper Miners in England, as having arisen in consequence of a misunderstanding between Mr. Talbot (one of the landlords) and the Bank of England (the new occupiers and ironmasters). I believe the facts to be simply these—viz.: that there was about 15,000l. due for rents and royalties to Mr. Talbot, in respect of the works; that, when the Bank of England took possession, and began to work up and consume everything distrainable, Mr. Talbot insisted, in vain, on being paid, and was compelled to extreme measures in order to effect a settlement, and hence a short temporary stoppage. The bank has now been brought to its bearings, and things go on again for a season. It is only right the proper shoulders should bear the burden of a step involving such serious consequences to the workpeople. Mr. Talbot cannot be blamed.

Aberavon, June 13.

A SUFFERER.

OXIDE OF ZINC AS A PIGMENT.

Sir,—Your correspondent, "H. B." seems very much annoyed at some remarks of mine in a former letter; I regret this extremely, as no one can have a greater dislike to the personalities and invectives, which some of your correspondents occasionally indulge in, than I have; in discussing the merits of any invention, process, or theory, it would be much better if all such could be avoided. My allusions to "H. B.'s" connection with the white lead trade were made quite in a jocular spirit, and I regret that he should have taken them up so seriously; I promise him that I will be more guarded in my remarks for the future—at the same time, I must observe, that I consider his letter more querulous than the occasion demanded. In reference to the use of oxide of zinc as a pigment, I find it has made considerable progress; I shall be in possession of further particulars shortly, which I will submit to the consideration of such of your readers as take an interest in the matter through the medium of your columns.

Cremation, June 12.

T. H. LEIGHTON.

OXIDE OF ZINC AS A PIGMENT.

Sir,—I am obliged to "H. B." for his communication, and it appears, as I suspected, the oxide he referred to was made from the sulphuret; judging from that and its unsatisfactory results, confirms my suspicion of its impurity. I have heard of many patented processes for calcining zinc ores, but of the success of none. The fact of the metal made from the oxide rolling into sheets was no proof of its purity, even from sulphur, though it might be from lead; a small per centage of iron is what renders most of the spelter (particularly English) unfit to roll. In your Journal of Saturday, I see the returns of zinc imported are increased from 7245 to 12,769 tons—nearly double that of the past year. No wonder, then, that all our zinc works and zinc mines are at a stand—such is the effect of free trade in zinc; the capital lost, and prospects of our spelter trade ruined, our home mines injured to an extent it is impossible to ascertain; as, though the price of blende was low, still it enabled many mines to be worked, which must now be abandoned. The free trade Ministers did not take the trouble to inquire into the difficulties our English spelter makers had to contend with, in the use of the sulphuret instead of the carbonate, and the price of labour being nearly double that on the continent. These matters were never inquired into when the duty was taken off foreign zinc, and the result is, the ruin of the English trade. In no country in the world is less encouragement, or protection, given to the miner than in this, and which, after all, owes its present high position to its mineral wealth.

Liverpool, June 13.

SOFTENING HARD WATER.

Sir,—In your columns, of May 27th, there is a communication on this subject, by "A Bleacher," who inquires the method of using "milk of lime" for softening water, holding sulphate of lime in solution. I cannot help thinking your correspondent is wrong as to sulphate of lime rendering his water hard, and have no doubt the offending substance is the bicarbonate of lime, as all the water in the London clay contains more or less of this soluble salt, from a grain to three or four grains to the pint. Sulphate of lime is also present; but has not the same effect. Your correspondent must first ascertain, by analysis, the quantity of bicarbonate held in solution, which we will suppose to be 2 grs. of carbonate of lime (chalk) per pint, held in solution, as a bicarbonate, by excess of carbonic acid. This would about be equivalent to 9 ozs. of caustic lime, and 7 ozs. of carbonic acid, with 7 ozs. of excess of carbonic acid in 500 gallons of water.

Now, 9 ozs. of caustic lime require 40 gallons of water to dissolve it, forming a saturated solution. This must be obtained; and the clear and colourless solution being poured into the 500 gallons of hard water, the excess of acid in the bicarbonate will immediately leave it, seizing upon the caustic lime, forming a carbonate (an insoluble salt), and sink to the bottom; in the meantime, the bicarbonate, having lost its excess of

acid, is also transformed into a carbonate, and also sinks to the bottom, leaving 540 gallons of water, clear and soft, and 2 lbs. of chalk, as a sediment. Some care is necessary as to the quantity of lime water to be used—as, if too little, some lime, in the state of carbonate, will still remain in solution, and, if too much, lime in a caustic state—hence the necessity for analysis. I am, to some extent, indebted for my information to an excellent little work, entitled, *Treatise on the Falsifications of Food, and Chemical means to detect them*, by Mr. John Mitchell, M.C.S., of Hawley-road, Kentish Town, and a correspondent of your valuable Journal.

Stoke-Newington, May 13.

VENTILATION OF COLLIERIES.

SIR,—I enclose you a small sketch of a plan for ventilating collieries, which has occurred to me, and which might be advantageously applied where there is an available stream of water—that drawn from the pit, in some cases, would be sufficient. A, represents the upcast shaft; B, a water-wheel, 18 ft. in diameter, and 12 ft. breast, made of light iron-work, with deep float-boards, and a kind of bucket, fastened to the back of each, to keep the water from getting to the centre; C, a pipe for conveying the water on the wheel. I purpose driving the wheel at the rate of 18 or 20 revolutions a minute, which, by forming a vacuum, will cause a strong current of air to pass up the shaft, thereby ventilating the workings.

Alston, June 13.

BRETT AND LITTLE'S ELECTRIC TELEGRAPH.

SIR,—I have waited for two weeks, in hopes of seeing some notice, from abler and better informed correspondents, of the success of Messrs. Brett and Little's electric telegraphic converter. Having had an opportunity of examining it, and testing its efficiency, very soon after it was set to work, I can bear my testimony to its perfect success, and, as far as I can judge, its great superiority over the former system. I do not know whether you, or many of your readers, are aware, that on a portion of the Whitehaven Junction line—viz. at Workington—where the Cockermouth line joins, the two railways run together for about a furlong; and there being but a single line of rails, a telegraph was necessary at that portion, to prevent the possibility of collision. The Electric Telegraph Company placed one there for that purpose; and they, therefore, have the opportunity of giving the two systems a fair test in point of rapidity of communication for any given message. In this instance, there are only two wires in both; but we know that two are insufficient in the main lines for Messrs. Cooke and Wheatstone's; while, if I understand rightly, Messrs. Brett and Little never require more—at any rate, I can speak from my own observation of the precision and rapidity with which messages were executed by it. The difference in the number of wires is, of course, the great element of economic value; while I consider the mode of communication—viz. in the common letters of the alphabet—as a decided advantage in respect to its use. Should this letter have been anticipated by some more competent correspondent, I should not desire its insertion; but, from the inquiries which have been made, I thought such a notice was due to the inventors, and would, perhaps, derive additional value, from my being utterly unconnected with them or the railway, and, indeed, personally unknown to either.

Cumberland, June 9.

A CONSTANT READER.

PROGRESS OF THE ATMOSPHERIC RAILWAY SYSTEM.

SIR,—In your last week's Journal, there was an inquiry, by "A South Devon Shareholder," on the progress we were making with our railway. I beg to state, that we expect to have a line to lay down in a few weeks, which will most completely establish its superiority over every other system of propulsion yet brought under public notice. Our experimental line has been working upwards of 15 months; it has remained unaffected by all atmospheric changes, subsidence of sleepers, and every other cause which affects other railways. The longitudinal opening has never required one minute's attention during that time, and is now in a better state than when first laid down. The elasticity of the tube is not in the least impaired; and, since the first time it was set to work, nothing has occurred to the tube to injure its working in the slightest degree. There is a certainty in its action which does not exist in any other system; and I confidently believe, from the experience we have gained, that, when laid down on the principle developed by us, it would work for more than a century, without being in the least impaired. The cost of maintenance is limited to about one man for every four miles—his duty being merely to keep the outside of the tube painted. The atmospheric system, as developed by our system of atmospheric propulsion, after years of deep consideration and experiment, appears to me to be the nearest possible solution of the problem of artificial locomotion.

The power is generated with the greatest economy, and transmitted to the train with the least possible loss. In an economical point of view, the construction of a line of railway is vastly superior in proportion to a given amount of traffic; the wear and tear of the line is also reduced to a minimum; the expense of maintenance of the power (the stationary engines and traction tube) is also reduced to a minimum; the system is admirably suited to the wants of the public, by running frequent light trains, at high speeds, at reduced fares; the system embodies the three great principles of speed, safety, and economy, in the highest degree.

We are, Sir, unfortunately placed in the same position as all other inventors of great and important improvements. We have to wait until the public prejudices are removed to enable our system to be carefully investigated and considered; and then I feel confident that railway and mining proprietors will see that it is greatly to their interest to apply it. There is no other system that can compete with it, either for economy of first cost, or in working. It is suited equally for every description of traffic and of country. The expense of the tube is full 50 per cent. less than any other atmospheric system brought before the public. All the objections brought against the atmospheric principle by its greatest opponents, and the difficulties found to exist in practice, we have completely removed. Our sole attention has been directed, for many years, in perfecting the system in all its details, and it only remains to have a short line of working railway laid down to remove every doubt.

Blackwall, June 14.

THOMAS CLARKE.

ATMOSPHERIC RAILWAYS.

SIR,—Observing a letter of inquiry from "A South Devon Proprietor," who is anxious respecting the fate of the atmospheric system, I beg to observe that, if he waits till the longitudinal valve is dispensed with, he will wait till the system be entirely abolished. As he wishes to know if the principle is founded on a true basis, I reply, as far as the longitudinal valve is concerned, as a continuous principle it is on a correct basis, and any attempt to alter it will be fatal. As it is what is called a constant, or always in gear, or at least allows the piston and train to be always united, which is a *sine qua non* in high velocities, any touch-and-go, connecting and separating, plan is bad in principle, and worse in practice, irregular and violent in its action, and destructive to itself and everything else. As to the system of propulsion, it is more than decided to be bad, and may be summed up as costly in construction, uncertain in action, not durable in wear, and profitless in adventure, and the sooner laid aside the better for all concerned.

[We readily insert our correspondent's letter; without, however, in the slightest degree, adopting his opinions, as he is clearly in error, and somewhat in a mist, as to the working of the principle, and his construction of the letter of our correspondent of last week—"A South Devon Shareholder." In the first place there is not a word about "the principle being founded on a true basis;" in that respect, our correspondent, who is a practical machinist and geometer, is perfectly able to judge for himself. As to his "touch-and-go connecting and separating plan," we are not aware of any being now before the public; we never saw but one, which was "Collins's thread-and-needle system," but which was, very naturally, never supported; and as to his opinion, or rather assertion, dogmatically expressed, "that the system of propulsion is more than decided to be bad," we differ with him in toto. In the South Devon case, it is the value that is mechanically erroneous in principle, and which might be simply remedied, if the "eminent engineers and patentees" connected with it would listen to reason, and the offers which we know have been made them. He is, moreover, decidedly wrong in his latter conclusions; for a railway, properly constructed, for combining all the advantages inherent in atmospheric traction, is certain in action, exceedingly durable in wear, highly profitable as an adventure; and, we can inform him, that another year has elapsed, we have no doubt he will be able to see such a system at work, which will, in every way, prove its superiority over the locomotive.]

AIR-PUMPS AND THEIR ACTION.

SIR,—I have never met with any formula for ascertaining the quantity by measure, of air at the atmospheric pressure left in a receiver, after a given number of strokes of an exhausting pump; and I am inclined to believe either that there is none, or it is but little known, or requires for its comprehension and application a greater knowledge of algebra in its higher branches than falls to the share of the majority of your practical readers. This conviction induces me to make known, through the medium of your columns, a formula which I constructed for my own use in such calculations. Though, perhaps, in some cases, lengthy, it is simple; and it is better to have a formula which one can use with a little trouble, than one which one cannot use at all; but I will not occupy your valuable space with more preliminary remarks, but bring forward my formula at once. Let "a" represent the content of a receiver, and let "b" express the ratio between the exhausting pump and the receiver. For instance, if the pump were $\frac{1}{10}$ th the capacity of the receiver, "b" would = 20. It is required to find the quantity of air left after any number (n) of strokes of the pump.—The first term will be + a. The second term = $\frac{a}{b}$. The third term = $\frac{a}{b^2}$. The fourth term = $\frac{a}{b^3}$. The fifth term = $\frac{a}{b^4}$. The sixth term = $\frac{a}{b^5}$. The seventh term = $\frac{a}{b^6}$. The eighth term = $\frac{a}{b^7}$. The ninth term = $\frac{a}{b^8}$. The tenth term = $\frac{a}{b^9}$. The eleventh term = $\frac{a}{b^{10}}$. The twelfth term = $\frac{a}{b^{11}}$. The thirteenth term = $\frac{a}{b^{12}}$. The fourteenth term = $\frac{a}{b^{13}}$. The fifteenth term = $\frac{a}{b^{14}}$. The sixteenth term = $\frac{a}{b^{15}}$. The seventeenth term = $\frac{a}{b^{16}}$. The eighteenth term = $\frac{a}{b^{17}}$. The nineteenth term = $\frac{a}{b^{18}}$. The twentieth term = $\frac{a}{b^{19}}$. The twenty-first term = $\frac{a}{b^{20}}$. 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CALEDONIAN RAILWAY COMPANY—LOANS ON DEBENTURES.—TENDERS FOR LOANS ON DEBENTURE BONDS are now RECEIVED in sums of not less than £500, for any number of years not exceeding five. Interest to be at the rate of 5 per cent. per annum, payable half-yearly, in London, Edinburgh, Glasgow, or in any currency bank.

Tenders to be addressed to this office, giving full name and address of lender.—For further particulars apply to Messrs. Foster and Braithwaite, 68, Old Broad-street, London.

By order, D. RANKINE, Treasurer.

Caledonian Railway Office, Edinburgh, Feb. 23, 1848.

LONDONDERRY MINING COMPANY OF NOVA SCOTIA.—Capital, £240,000, in 2000 shares, of £120 each.

It is provided that 21 days' Notice be given of each call, and that no call exceed 20 per cent., and that successive calls be not made at less than six months, and that the aggregate amount of calls, made in any one year, do not exceed 40 per cent.

Incorporated by Act of the Provincial Parliament.

The following directors have been named in the Act (together with other persons) as constituting the corporation; and they are to continue in office until superseded, or confirmed, by a vote of the London shareholders—viz.:

The Hon. W. A. BLACK, } Members of the Legislative Council.
The Hon. J. E. FAIRBANKS, }
The Hon. ALEX. KEITH, }
J. W. JOHNSTON, Esq., Advocate-General.

This company has been formed for the purpose of WORKING A MINE, recently discovered, of IRON ORE of superior quality and richness, situated in the province of Nova Scotia, about 70 miles from Halifax, and about seven miles from a good shipping port, in the Bay of Fundy.

This extraordinary deposit of specular iron ore has been surveyed by Dr. Geaner and J. W. Dawson, Esq., provincial geologists. Extracts from their reports are appended to the prospectus, and other unquestionable references.

"To John Ross, Esq., of Truro, Nova Scotia.

"DEAR SIR,—It gives me great pleasure, in reply to your request, to express the high opinion I entertain of the talents, acquirements, sagacity, and high qualifications of Mr. J. W. Dawson, of Pictou, as a mineral surveyor and geologist, of which I had an opportunity of judging during an examination, which we made together, of several parts of Nova Scotia, and, among others, the district of the Folley river—to the valuable ore of which you are now directing public attention.

I may further add, that Mr. Dawson's name is now well-known to the Geological Society of London by several Memoirs on the Geology of Nova Scotia, accompanied by maps and sections, published in their Proceedings and Quarterly Journal.

"I have the honour to be, dear Sir, yours, &c.,

(Signed) "CHARLES LYELL.

"11, Harley-street, May 2, 1848."

Application for shares will be received by Mr. Charles Walton, of the firm of Charles Walton and Sons, Newmarket-court, 73, Cornhill.

One-third of the capital stock of the company is reserved for the colonial shareholders—the remaining 1333 shares are offered to capitalists in London, until the 20th inst.

Printed forms of application may be obtained with the prospectus, where the Act may be seen.—Prospectuses may be obtained, and specimens of the ore seen, by applying to Messrs. Royton and Brown, 40, Old Broad-street; Messrs. Charles Watson and Sons, 73, Cornhill; or on application to Mr. Henry English, 25, Fleet-street.—Prospectuses can also be had at the office of the Mining Journal, 26, Fleet-street, London.

PATENT GALVANISED IRON AND WIRE ROPE WORKS.

MILLWALL, POPLAR.

ANDREW SMITH begs to inform the Mining, Railway, and Shipping interests, that he has obtained A PATENT for an IMPROVED METHOD OF GALVANISING IRON, producing a much superior article at a considerable saving in cost—the improved process for galvanising wire rope, adding only £10 per ton instead of £20, under the ordinary processes. The rope is extensively used in damp situations, for mining and railway purposes, and for ships' standing rigging.

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ON THE CONNEXION OF GEOLOGY WITH TERRESTRIAL MAGNETISM:

THE GENERAL POLARITY OF MATTER, THE MERIDIONAL STRUCTURE OF THE CRYSTALLINE ROCKS, THEIR TRANSITIONS, MOVEMENTS, AND DISLOCATIONS, INCLUDING THE SEDIMENTARY ROCKS, THE LAWS REGULATING THE DISTRIBUTION OF METALLIFEROUS DEPOSITS, AND OTHER MAGNETIC PHENOMENA.

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GEOLOGY.—Persons wishing to become ACQUAINTED with this interesting BRANCH OF SCIENCE, will find their STUDIES greatly FACILITATED by means of ELEMENTARY COLLECTIONS, which can be had at TWO, FIVE, TEN, TWENTY, or FIFTY GUINEAS each, arranged and sold by

Mr. TENNANT, 149, STRAND, LONDON.

A COLLECTION FOR FIVE GUINEAS, which will illustrate the recent works on Geology, contains 200 specimens, in a mahogany cabinet, with five trays—viz.:

MINERALS which are the components of rocks, or occasionally imbedded in them—Quartz, agate, calcined, jasper, garnet, zeolite, hornblende, angite, asbestos, felspar, mica, talc, tourmaline, calcareous spar, fluor, selenite, baryta, strontia, salt, sulphur, plumbago, bitumen, &c.

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Mr. TENNANT gives private instructions in Mineralogy, with a view to facilitate the study of Geology, and of the application of Mineral substances in the Arts, illustrated by an extensive collection of specimens, models, &c.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY.....South Wheat Betsey Mining Co.—Buller's Arms, Mary Tavy, Devon.

MONDAY.....Architects' Civil Engineers', Builders', and General Insurance Company, offices, at Two.

TUESDAY.....Minerva Life Assurance Company—offices, at Twelve for One.

County Assurance Company—offices, at One.

WEDNESDAY.....Rhymney Iron Company—offices, at One.

Sambre and Meuse Railway—London Tavern, at One.

Birmingham and Oxford Junction R'way—Dee's Hotel, Birmingham, One.

Birmingham, Wolverhampton, and Dudley Railway—ditto, at Twelve.

THURSDAY.....Llynvi Iron Company—offices, at One.

[The meetings of Mining Companies are inserted among the Mining Intelligence.]

SHREWSBURY AND BIRMINGHAM RAILWAY.

A special meeting was held at the offices, Moorgate-street, on Thursday last, for the purpose of considering the draft of a bill, confirming the forfeiture of shares, and authorising the directors to borrow money.

The Hon. H. R. CLIVE, M.P., in the chair.

Mr. W. G. ROY, the solicitor, read the heads of the bill to authorise the Oxford, Worcester, and Wolverhampton Railway Company to make a deviation in their line, and to empower the Shrewsbury and Birmingham, and the Birmingham, Wolverhampton, and Dudley Railway Companies, to contribute towards a station at Wolverhampton, which is to be constructed under the superintendence of a joint committee. The three companies mentioned are to raise and subscribe, in capital and loan, 13,333l. each, together 40,000l., for its construction. It was explained that the Shrewsbury and Birmingham had no further interest in the bill than the amount subscribed towards the joint station. After a few remarks the bill was unanimously approved.

A resolution was passed confirming the forfeiture of 150 of class A shares, and 510 of class B shares, empowering the directors to dispose of them, or to merge them into the capital stock of the company. The scrip had been sold by the original holders, the purchasers had neglected to register the shares; the original parties were, therefore, registered by the company, and they had since paid up the calls. The forfeiture was the only legal means by which they could be restored to the original parties.

On the motion being proposed for authorising the directors to borrow 433,000l., on bond or mortgage, a discussion took place.—Mr. FINEO contended that they would not be able to borrow the money at 5 per cent., and proposed that the directors be authorised to raise the money on debentures or on new shares, bearing interest at 7 or 8 per cent. per annum. He submitted a memorial, which he said was signed by the holders of 2500 shares; it expressed a desire that the works should be pressed forward vigorously, so as to open the line as early as possible, suggesting that it was hopeless to borrow money at 5 per cent., and recommending instead thereof the issue of new 8s. shares, in the proportion of one new share for every four ordinary shares in the company, to bear interest at the rate of 8 per cent. per annum, in order to raise the money speedily.

Mr. THOMAS, a director, said they had not yet tried to borrow the money; he had no doubt they would be able to obtain it; but, at all events, he thought it would be the duty of the directors first to ascertain whether they could not borrow the money at 5 per cent., before they adopted an extreme measure, such as that proposed.

A conversation ensued, in the course of which it was stated that the arrears on calls amounted to 80,000l., and that the last call was for 104,000l., of which they only received 55,000l. The preference share scheme was asserted to be a speculation emanating from the Stock-Exchange, which was denied by Mr. Field.

Mr. MARSHALL moved, as an amendment or addition to the original motion, that the directors be also authorised to raise money by the creation of new shares, on such terms and in such manner as they shall deem fit.—The original motion, as amended, was then put, and carried by 19 to 17.—Thanks were voted to the chairman, and the meeting separated.

ST. KATHARINE DOCKS.—Notice is hereby given, that a HALF-YEARLY GENERAL MEETING of the proprietors of the St. Katharine Docks will be HELD in the Dock-house, Tower-hill, in the county of Middlesex, on Tuesday, the 11th day of July next, at Twelve o'clock at noon, for the purpose of declaring a dividend on the capital stock of the company, for the half-year ending the 30th of June inst.; also, for the election (by ballot) of 21 directors for the year ensuing; and that the books of the company will be closed on Friday, the 23d inst., and opened again on Wednesday, the 26th day of July next.

By order of the court, JOHN HALL, Secretary.

St. Katharine Docks, June 14, 1848.

N.B.—The chair will be taken at Ten o'clock precisely.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS TO CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY'S BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th; and from Suez on or about the 10th of every month.

For rates of passage-money, plans of the steamers, and to secure passages, apply at the company's offices, No. 122, Leadenhall-street, London.

NOTICE TO SHIPPERS OF GOODS AND PARCELS.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY'S STEAMERS TO INDIA AND CHINA.—GOODS and PARCELS, sent direct to the company's Parcel-office, at or before 6 p.m. on the 17th of each month, are FORWARDED at less cost to the shipper than when sent through any intermediate channel. Cases must not exceed 112 lbs. weight each for Aden, Ceylon, Madras, Calcutta, and China; and 40 lbs. each case for Bombay. No package for India and China can, under any circumstances, be shipped at Southampton, unless it be cleared through the Custom-house, and placed aboard the steamer by noon on the 19th of each month. Detailed particulars can be obtained on personal application or by writing.—Parcel Department, 122, Leadenhall-street, May 13, 1848.

MINING AND GENERAL MUTUAL LIFE ASSURANCE SOCIETY.

Registered Provisionally, under the Act of Parliament, 7 and 8 Vic., c. 110.

Temporary guarantee fund, £100,000.

In 5000 shares, of £20 each.—Deposit £2 per share.—In pursuance of the Registration Act, 2s. per share only will be payable on taking up the shares.

One-tenth of the entire profits of this association to be applied to form a fund, for securing annuities to aged members and their widows and orphans—to the relief of deserving and distressed miners—and towards founding and supporting charitable institutions in connection with mining interests.

PRELIMINARY PROSPECTUS.

As the knowledge of the principle of life insurance has been more and more diffused, and the manifold advantages of the system appreciated, the number of assurance offices has been constantly and rapidly on the increase. Nevertheless, the persons who have hitherto availed themselves of the benefits of this system, are comparatively few in number. Of the 20,000,000 of inhabitants of Great Britain, not more than 120,000 persons have taken out policies on their lives in all offices; so that it may not be too much to say, that the system of life insurance has scarcely passed the first stage of development.

This fact alone is sufficient to demonstrate the ample room existing for the further extension of the system; while the fact of the fishing condition generally of the assurance offices already established, not only proves the soundness of the principles on which they are founded, but affords a guarantee for the like success of additional establishments, having the same objects in view, and conducted with equal prudence and ability.

As life insurance has been thus extended, various sections of the community have been induced to form their own establishments, so that all professions, and several industrial as well as religious classes, have now each their own assurance offices—adapted to the peculiar circumstances of those portions of society with which they are respectively connected, and mainly dependent on them for support.

It is, however, remarkable, that while in the metropolis alone the life assurance companies of all classes and descriptions exceed 100 in number, with engagements computed at upwards of £115,000,000 sterling, those companies do not comprise one emanating from or connected with the Mining interests, which are those of a class that has done more than any other to develop the resources and promote the extension of the commerce of the country. So long, then, as this important and influential section of the community possesses no assurance association, especially identified with its interests, it is manifest that a larger void in the system of insurance remains to be filled up.

The various individuals directly connected with mining operations in this kingdom, are far more numerous than the members of the clerical, medical, and legal professions, which have established among them no less than nine different assurance companies. The persons directly employed in the mining operations of this country are about 243,311 in number; the annual value of the mineral productions is £37,632,000; and it is calculated that the mine proprietors, agents, and those connected immediately or indirectly with mining interests, represent an amount of population, and of fixed property, exceeding those of nearly all the other classes of the kingdom having representative assurance institutions. This wealthy and powerful class, undoubtedly, requires the formation of an establishment bearing its own name, conducted principally by well-known members of its own body, and especially adapted for the extension of the advantages of life insurance among the numerous individuals of which it is composed. For this purpose, the

MINING AND GENERAL MUTUAL LIFE ASSURANCE SOCIETY

is proposed to be established. Its formation is also called for in consequence of the working miners being either excluded from existing offices, or subjected by them to a considerably higher scale of charges in the annual premiums than experience has shown to be necessary. The mining interests possess more than ordinary power and influence to promote all the objects which such an institution is calculated to effect; and, in submitting the present scheme to the public, it has been determined to base the society upon principles which cannot fail to command its countenance and support.

1. By the formation of a self-sustaining and safe system, free from the objections usually urged against sick societies and mine clubs.

2. By affording inducements and facilities to working miners to make a provision against the infirmities of old age, sickness, or incapacity for labour, and by assuring small sums on a self-supporting and safe system, free from the objections usually urged against sick societies and mine clubs.

3. The affairs of the society to be investigated, and the profits ascertained and apportioned at the end of every five years; and, after such a sum shall have been reserved as shall be deemed amply sufficient to meet all contingencies, and to enter into the average of succeeding years, the profits to be divided as follows:—

Four-fifths of the profits to be apportioned among the members assured for the whole term of life, on the participating scale of premiums, and the amount may either be added to the policy, to increase the sum insured, or may go in reduction of future premiums, at the option of the assured.

Of the remaining one-fifth of the profits, one moiety (or the 1-10th of the entire profits) to be appropriated to the "Miners' Fund," and the residue to be invested as an accumulating fund for the extinction of the paid-up capital; and as soon as such fund shall equal the capital advanced, with £100 per cent. on the whole, by way of bonus, the shareholders to be paid off, and thereupon the whole of the profits, except the 1-10th appropriated to the "Miners' Fund," to be divided among the assured.

THE BUSINESS OF THE SOCIETY.

1. Assurances on single lives, on joint lives, and on survivorships.

2. Assurances on the lives of persons about to proceed to, or reside in, foreign climates.

3. Tables framed for non-participating policies on a lower scale of premiums.

4. Tables on original data, computed for the express purpose of enabling miners and others to insure against sickness or old age, as well as to secure a provision for their families at death.

5. Immediate annuities to be granted, and deferred annuities to be secured, to commence at any specified age.

6. Reversionary and survivorship annuities to be granted.

7. Tables to be constructed, to enable the operative miner to secure a deferred annuity of £10 and upwards for old age, and an annuity payable to his widow and children after his death.

8. Educational and other endowments for children to be granted.

This is the only office identified with the interests of miners, and if they avail themselves of their own institution for the purpose of securing the vast amount of insurances which they may effect or influence, it is obvious that its success must speedily equal that of any assurance company in the kingdom.

In order that the objects of the society may be more successfully carried out, the board of directors will be principally composed of gentlemen connected with mining and the manufacture of metals; and it is believed that the efforts of the members of this numerous and influential class in the establishment of the Mining and General Mutual Life Assurance Society, will open an extensive field for operation, and prove advantageous to the mining interests.

It is considered that the shares of this society will be regarded as offering a desirable investment to a limited amount, abstracted from all inducements to speculation; and the promoters look to the circulation of this prospectus through private channels for securing that support which they have been in various quarters encouraged to expect.

In the allotment of the shares, preference will be given to applicants connected with mining interests, and a due proportion will be reserved for medical men and mine agents supporting the interests of the company.

On the deposit of £2 per share, 2s. only will be required to be paid on taking up the shares, and the remainder upon the execution of the Deed of Settlement.

Application for shares, in the form annexed, addressed to the provisional directors, may be forwarded to—

Messrs. Watson and Cuel, mine share agents, St. Michael's-alley, Cornhill.

Mr. James Lane, mine share agent, 75, Old Broad-street, City, London.

Mr. Henry Elery, Truro.

Mr. W. C. Hennah, Liskeard.

Mr. W. E. Cummins, Tavistock.

Mr. Hugh Ebrington Croker, Plymouth; or to the Office of the Mining Journal, 26, Fleet-street, London.

FORM OF APPLICATION FOR SHARES.

GENTLEMEN,—Please to allot me shares, of £20 each, in the above society; and I hereby undertake—provided that I approve of the board of directors when formed—to accept the same, or such less number as may be allotted to me, and to pay the deposit thereon, and to execute the Deed of Settlement, and all other necessary documents, when required.

Dated this day of 1848.

Name in full

Profession or business

Address

FOURDRINIER'S PATENT SAFETY APPARATUS, for PREVENTING ACCIDENTS IN MINES AND OTHER PLACES, WHEN THE ROPE OR CHAIN BREAKS.

By the ADOPTION of this INVENTION the LIVES of the WORKING MINERS may be PRESERVED, and the PROPERTY of the MINE OWNERS PROTECTED from the serious consequences of either of the following accidents—viz.:

1. From the men, or the load, being precipitated to the bottom of the shaft when the rope or chain breaks: in this case the apparatus is self-acting.

2. From either the men, or load, being drawn over the pulley: in this case, also, the apparatus is self-acting.

3. From the fearful consequences to men or load of a "whirl," or run: in this case the result is equally certain.

A COAL PIT, with the SAFETY APPARATUS ATTACHED to the CAGE, is daily at WORK near BURSLEM, in the STAFFORDSHIRE POTTERIES.

To inspect the apparatus, or to obtain any further information, application may be made to Mr. Edward N. Fourdrinier (the patentee), Cheddleton, near Leek, Staffordshire; or to Mr. Joseph Fourdrinier, 68, Abingdon-street, Camden Town, London—who are prepared to GRANT LICENSES for the USE of the PATENT.

RAILWAY AND OTHER IMPORTANT RECORDS, EFFECTUALLY PROTECTED FROM DAMP AND VERMIN.

Extract from the Appendix to the Second Report of the Commissioners on the Fine Arts.

"In 1839, I superintended the construction of a house, of three stories, on the Lac d'Engel. The foundation of the building is constantly in water, about 19 inches below the level of the ground floor. The entire horizontal surface of the external and internal walls was covered at the level of the internal ground floor with a layer of

SEYSSEL ASPHALTE.

less than half an inch thick, over which coarse sand was spread. Since the above date, no trace of damp has shown itself round the walls of the lower story, which are, for the most part, painted in oil, of a grey stone colour. It is well known that the least moisture produces round spots, darker or lighter, on walls so painted. Yet the pavement of the floor, resting on the soil itself, is only about 2½ inches above the external surface of the soil, and only 19½, at the utmost, above that of the sheet of water. The layer of asphalt having been broken and removed, for the purpose of inserting the sills of two doors, spots, indicating the presence of damp, have been since remarked at the base of the door-posts.

The DIRECTORS of the SEYSSEL ASPHALTE COMPANY have much pleasure in recommending to the notice of ENGINEERS and ARCHITECTS the application of the ASPHALTE of SEYSSEL, as the only effectual mode of preventing damp in basement floors, and water from percolating through the ARCHES of a VIADUCT.

The arrangements of this company enable works of any extent to be executed with the greatest promptitude.

SEYSSEL ASPHALTE DEPOT, STANGATE, LONDON.

ESTABLISHED 1838.

* This method has been adopted at the New Houses of Parliament.

IMPORTANT TO RAILWAY AND STEAM NAVIGATION COMPANIES, MANUFACTURERS, AND ENGINEERS.

W. BROTHERTON AND CO'S PATENT LUBRICATING FLUID (or Animal Oil) FOR ALL DESCRIPTIONS OF MACHINERY.

W. B. & CO. have the pleasure to state, that the above article is extensively used in Her Majesty's Steam Navy, and by several of the principal Steam Navigation and Railway Companies, and is pronounced by them, and by the first practical engineers of the day, to be far better adapted for the purposes of lubrication than any other article hitherto used for such purposes. The Patent Lubricating Fluid is equally applicable for the most intricate and finest pieces of machinery, as for the heaviest bearings of the steam-engine. It is cheaper, much more economical, and cleaner than oils at present in use; is free from smell, and calculated to effect a vast saving in the expenditure of working steam powers.

Further particulars can be had, and testimonials seen, by application to the manufacturers.

W. BROTHERTON & CO., Hungerford Wharf, Strand, London.

N.B.—The above article will burn in lamps, and give a light equal to the best sperm oil.

PATENT FLEXIBLE INDIA-RUBBER PIPES AND TUBING, for Railway Companies, Brewers, Distillers, Fire-Engines, Gas Companies, Gardening and Agricultural purposes, &c.

THE PATENT VULCANISED INDIA-RUBBER HOSE-PIPES are made to stand hot liquor and acids, without injury—do not become hard or stiff in any temperature (but are always perfectly flexible); and as they require no APPLICATION of oil or dressing, are particularly well adapted for Fire Engines, Pumps, Gas, Beer-Engines, Gardens, and all purposes where a perfectly Flexible Pipe is required.

Made all sizes, from 3-inch bore upwards, and of any length to order.

Vulcanised India Rubber Garden Hose, fitted with brass-taps. Copper branch and Rose's complete, ready to be attached to pumps, water-butts, or cisterns.

Sole manufacturer, JAMES LYNE HANCOCK, Goswell Mews, Goswell-road, London.

N.B.—Vulcanised India-Rubber Washers, of all sizes, for joints of hot-water and steam-pipes, and Vulcanised Sheet Rubber, any thickness, for all kinds of joints, and other purposes.

PATENT ALKALI COMPANY'S IRON PAINT.—This PAINT, now first offered to the public, is the PRODUCT of a PATENT PROCESS, and possesses VALUABLE and PECULIAR QUALITIES, not otherwise attainable. Its colour is a purple-brown—it is perfectly innocuous—is far more durable than lead paint, and two coats are fully equal to three of any other paint. A single coat will be sufficient to demonstrate this. It dries rapidly, and its durability is very great.

From its chemical composition, it is especially, and above all other paints, adapted for covering iron; also wood, and stucco, or brick walls. The peculiar oxidation of the base of this paint makes it impossible that further change should take place in its composition. Its identity with iron secures it from galvanic action, so injurious to the durability of lead paints on iron work. It has been exposed on shipping to the action of sea water, and the sulphuretted hydrogen, so prevalent in sea-ports and tidal harbours, for three years, without change.

Its cheapness and strength render it admirably adapted for iron railings, farm buildings, and shipping. It will also cover creosoted timber. Price, by the ton, £20, delivered in London. All orders to be addressed to the offices of the company, 20, Fenchurch-street, London; where testimonials may be seen as to the value of the paint.

EVANS, BROTHERS, Agents.

TO ENGINEERS AND BOILER-MAKERS.

LAP-WELDED IRON TUBES, FOR MARINE AND LOCOMOTIVE STEAM-BOILERS.

TUBES FOR STEAM, GAS, AND OTHER PURPOSES, ALL SORTS OF GAS FITTINGS.

THE BIRMINGHAM PATENT IRON TUBE COMPANY, 42, CAMBRIDGE-STREET, BIRMINGHAM, & SMETWICK, STAFFORDSHIRE, MANUFACTURE BOILER AND GAS TUBES, under an exclusive License from Mr. R. Prosser, the patentee. These tubes are very extensively used in the boilers of marine and locomotive steam-engines in England and on the Continent—are stronger, lighter, cheaper, and more durable than brass or copper tubes, and are warranted not to open in the weld.

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WORKS—SMETWICK, STAFFORDSHIRE.

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LAP-WELDED IRON TUBES.

W. H. RICHARDSON, Jun., and CO., MANUFACTURE every description of WROUGHT-IRON TUBES, for Locomotive and Marine Boilers, Gas, Steam, and other purposes.

PATENT TUBE WORKS, DARLSTON, STAFFORDSHIRE.

IMPROVED LIFTING JACKS.

MANUFACTURED BY W. AND J. GALLOWAY, PATENT RIVET WORKS, MANCHESTER.

* The attention of parties who employ Lifting Jacks, is respectfully requested to the superiority of those annexed, over those hitherto in use.

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES, AND CLOCKS.—E. J. DENT, 82, Strand, and 33, Cockspur-street, watch and clock maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6s. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8s. to 12s. each.

DENT'S PATENT DIPLIDSCOPE, or meridian instrument, is now ready for delivery. Pamphlets containing a description and directions for its use, 1s. each, but to customers gratis.

THE PATENT OFFICE AND DESIGNS REGISTRY, No. 210, STRAND, LONDON.

INVENTORS will receive (gratis),